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A comprehensive approach to child health through parent and teacher education.

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A COMPREHENSIVE APPROACH TO CHILD HEALTH THROUCH PARENT AND TEACHER EDUCATION

A Dissertation Presented

By

ELIZABETH L. BOWEN

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Education

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DEDICATION

To my parents with thankfulness

for their work and sacrifice.

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ABSTRACT

A Comprehensive Approach to Child Health Through
Parent and Teacher Education

(February 1977)

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Because biological integrity is a fundamental prerequisite to sound psychological development, and health and nutrition are of importance in maintaining that integrity, they must be of primary concern to the discipline of education:

> As an organism, the child is not only a mind and a personality capable of being unmotivated, unprepared, hostile, frustrated, understimulated, inattentive, distracted, or bored; he is also a body which can be tired, hungry, sick, feverish, parasitized, brain-damaged, or otherwise organically impaired (Birch and Gussow, 1970:7).

Any interference with the biological integrity, that is, with the health of a child, is likely to impair his ability to learn, and thereby to suppress his potential.

The significance of this intimate relationship between biological and psychological development is self-evident in the developing nations of the world where over two-thirds of the children suffer chronic malnutrition which stunts their physical growth and impairs their mental development. In order to be effective, educational efforts in those nations must be preceded or accompanied by intensive health and nutrition

programs to ensure a minimum standard of health and wellbeing for the children. Therefore, health, nutrition, and education will necessarily have to be regarded as central and inseparable components of comprehensive child development programs.

Although poor health and malnutrition may not be as extensive in the United States as in many developing countries, substantial child health problems do exist and they adversely affect children's lives and their learning abilities. Millions of American children suffer from a wide range of problems: malnutrition, birth defects, serious accidents, perceptual disabilities, orthopedic handicaps, emotional and mental illnesses, communicable diseases, and severe forms of social pathology including poverty, racism, family breakdown, crime, homicide, and child abuse.

The following table gives one an idea of the magnitude of the problem (detailed documentation is given in Chapter One):

AMERICAN CHILDREN SUFFERING FROM IMPAIRED BIOLOGICAL INTEGRITY (AND CONCOMITANT PSYCHOLOGICAL IMPAIRMENT)

	In Millions	In Percentages (approx.)
Accidents (requiring temporary restricted activity)	19	30
Vision disorders	12	17
Malnutrition	10	15
In single-parent families	8	13
Emotional illness	7	10
Child abuse	2-4	5
Speech problems	3	5
Mental retardation	3	5
Orthopedic handicaps	2	3
On behavior modifying drugs	2	3

In light of the vast numbers of children implicated in the above difficulties, the widely held assumption that American children come to school well-fed, emotionally stable, and completely healthy is open to question.

The Anisa Model, a comprehensive educational system whose main purpose is to place education upon a scientific basis, recognizes the crucial role of biological integrity in the development of children and:

> Therefore has a strong emphasis on proper nutrition and good health. It makes a provision for intervening in the anticipated life of a child a year or so before his conception by insuring that the nutritional status of the mother and father is maximally improved in preparation for his genesis. . . . [It further] provides for collaborative efforts among community, school, and home to maintain an optimum nutritional status in all students and staff (Jordan and Streets, 1973:294).

The purpose of the present dissertation is to delineate the essential features of the health component of the Anisa Model. It presents the conceptualization of a new approach to the resolution of children's health problems through prevention by parent and family life education, teacher training, and the delivery of comprehensive health services through the school system.

The main goals of the proposed approach are:

1. To insure optimum health in all children;
2. To supply parents and teachers with accurate and applicable health and nutrition information;
3. To provide primary health care within ready access of all children; and,
4. To teach children correct habits which will form the basis of their health practices for the rest of their lives.

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CHAPTER ONE

STATEMENT OF THE PROBLEM: DOCUMENTATION OF CHILDREN'S HEALTH PROBLEMS IN THE UNITED STATES

A. Nutrition

Malnutrition in early childhood is the foremost global public health problem. Throughout the world, between ten and twenty million young children have kwashiorkor or marasmus at any one time and most of them die of starvation. Additionally, an estimated two-thirds of the children in the developing world are weakened by various degrees of malnutrition, a condition which causes them to have an extremely low resistance to infections and disease. Largely due to malnutrition, 40% of all deaths in the developing nations are children as compared to only 4% in the United States. In Latin America, the death rates due to diarrheal infections are 40-90 times those of the United States (Pan American Health Organization, 1973:17-30). A large proportion of children's deaths are caused by the synergistic interaction of malnutrition, intestinal infections, and respiratory diseases. Severe Vitamin A deficiency alone causes over 100,000 children to go blind each year (UNICEF, 1975:1).

Nor is the United States free of these problems. The following discussion focuses only on American children although other industrialized nations may share similar problems. The 1970 White House Conference on Children reports:

> Hunger and malnutrition exist widely in the United States. Although the data are not yet complete, undoubtedly many of the

> estimated 27 million persons living in poverty in this country are financially unable to purchase an adequate diet. Hunger and inadequate nutrition lead to poor physical growth, impaired ability to learn, as well as needless discomfort and distress. Children should be experiencing hope and joy, not hunger and anxiety (p. 160).

Although American children have been gradually growing taller in the past century or so, poor children generally fail to grow as tall or as rapidly as other children. The average height of ten year old children of families with incomes below the poverty level lags behind that of ten year old children of non-poor families by more than a generation (U.S. Health, 1975:386).

The average daily intake of calories is lower for black than for white children, and for children of poor families than for those of non-poor families. Very low iron intakes and low hemoglobin values also fit the above pattern. Very low plasma Vitamin A values are found in Spanish American children; almost 50% are deficient in comparison with approximately 10% of white or black children (U.S. Health, 1975:378-384).

Studies demonstrate a high incidence of jeopardy for brain development among pregnant women, infants, and children in low socioeconomic groups in the United States. Nearly 60% of all pregnant women living in poverty have such severe caloric deficiency that the brain development of their unborn children is likely to be deficient. At least 20% of impoverished infants and young children are consuming such inadequate diets that their brain development is at risk. A full half of all infants and children living in poverty fall below the 25th percentile for weight, height, and head circumference on standard growth charts. Whereas one would expect to find only 3% of the population below the third

percentile in a normal group of people, one finds that 17% of poor infants and children fall below this level for small head circumference, an excess of 14%. Most of the infants and children in low economic groups are thus at a biological as well as cultural disadvantage, having sustained severe nutritional deprivation in utero and throughout childhood. Action must be taken to insure that these children obtain at least the minimum requirements for nutritionally adequate brain development (Livingstone, 1975:377-394).

Even for those children able to afford decent food, wholesome unpolluted foods are often rejected in exchange for sugary "junk foods." Untold millions of non-poor individuals eat inappropriate diets that undermine their health. Children in particular often do not eat the right proportions of protein, calories, vitamins and minerals required to maintain a properly balanced diet. In large part, this problem may be traced to the fact that the foods available in the marketplace

> . . . reflect the decisions of business executives and investors, rather than nutritionists and public health officials. Despite the close relationship between diet and disease, no person, governmental agency or private organization in the United States has had the mission or authority to develop a broad national food policy that would consider nutritional value as a top priority in the way our food is grown, processed and distributed. As it is, our agricultural practices and eating habits have developed with little guidance from health professionals (Jacobson, 1975:96-102).

Examples of nutritionally-based health problems that could be avoided abound. Excess sugar consumption is a case in point: over $400 million per year is spent on television commercials aimed at "the kiddie market" (Feingold, 1974:16). Many of these advertisements promote highly sweetened foods, such as breakfast cereals that frequently con-

tain 30-50% sugar. This massive miseducation of taste eventually results in the average sugar consumption per person amounting to 500 calories per day or 125 pounds per year (Mayer, 1976:26-34). Dr. John Yudkin, the world's foremost researcher on the negative effects of sugar on health, comments: "Let me especially stress that unnaturally large quantities of any substance . . . are almost certain to cause unwanted side effects" (1973:84).

Excess sugar consumption contributes to obesity, diabetes, and dental cavities. Obesity is a serious medical problem that affects 30-50% of adults and 15-20% of children and youth in the United States (Mayer, 1968:33-43). It is a severe psychological and social handicap. In addition, it is directly implicated in numerous diseases and is a major factor in cardiovascular disorders.

Largely due to inappropriate diets and excess sugar consumption, Americans suffer unnecessary and expensive dental decay. We currently pay dentists $2 billion annually for treating decayed teeth and it is estimated that we would be paying $8 billion per year were everyone to have all of their dental needs served (Jacobson, 1975:99). In spite of an almost universal incidence of dental cavities in the United States, 90% of children under five and 50% of children under 15 have never been to a dentist (White House Conference, 1970:184). The average number of dental care visits is higher for white than for black children and for non-poor than for poor ones. Poor children and black children have many more untreated decayed teeth and missing teeth as well as many fewer filled teeth than non-poor and white children (U.S. Health, 1975:418-422).

Food additives may have negative effects on children's behavior. A growing body of research suggests that food additives may be a major cause of hyperactivity. An estimated 10-20% of all children in the United States--six million or so--suffer from "hyperkinesis-learning disability," a condition that often includes some or all of the following characteristics: the child is in constant motion, is markedly fidgety, restless, uneasy, excitable, impulsive, and often aggressive. He has a short attention span, is unable to concentrate, is easily distracted, has little patience, and has a very low tolerance for failure or frustration. He is often uncoordinated and clumsy in both large and small muscle movements, and he frequently has sleeping problems. Boys are involved more often than girls, and there is often only one child with the problem in a family. The hyperactive child is generally of normal or high intelligence, yet fails at school due to "learning disabilities." Adults may also suffer similar symptoms.

Some two million American children are on behavior modifying drugs in an attempt to control the above problems. Dr. Ben F. Feingold (1974), an allergist and pediatrician, feels that drug therapy does not get to the root of the problem nor expose its basic cause. His experience with behavioral toxicology led him to conduct extensive research into the relationship between behavioral disorders and artificial food additives. He prescribed the elimination of artificial additives from the diets of hundreds of children who manifested many of the behavioral symptoms cited above. When all of the offending chemicals were removed, the majority of the children tested showed remarkable improvement. They were calmer, able to pay attention better, more able to sit still, more

peaceful, and generally far more in control of themselves. However, if the offending food was re-introduced, the problem behavior immediately returned. Thus, Dr. Feingold established a tentative cause and effect relationship between food additives and hyperactive behavior. This relationship has since been confirmed in over a thousand cases.

One cause of the problem, according to Dr. Feingold's hypothesis, is that "there is no natural body defense against the synthetic additives." Whereas 10-20% of the population have genetic variations which cause them to demonstrate marked adverse reactions to food additives, it is not known to what degree the rest of the population is affected. The people who are genetically predisposed to react to food additives are usually also sensitive to aspirin compounds and natural salicylates, which bear a structural resemblance to many common additives.

If Dr. Feingold's basic thesis is true--and a growing body of evidence strongly suggests that it is--it has massive implications for the food industry. The food industry operates on the assumption that small amounts of additives are harmless to everyone. Over a billion pounds of additives are produced annually, of which the average American consumes five pounds per year. These additives are composed of combinations of nearly 4,000 synthetic chemicals. Dr. Feingold's research raises serious questions about the immediate problem the additives present to a significant portion of the population (10-20%).

The Food and Drug Administration is conducting double blind studies to investigate Dr. Feingold's thesis. Legal action is being taken to require food manufacturers to test additives more thoroughly and to label products more accurately, completely, and clearly. Two bills before Con-

gress, HR 42 and HR 322, concern proper labeling of foods. Dr. Feingold proposes that foods without artificial substances should bear a conspicuous symbol to enable people to easily select additive-free foods. For references and an amplification of the above discussion, see Why Your Child Is Hyperactive, by Dr. Ben F. Feingold, 1974. Although his thesis is still in the experimental stage, it certainly bears serious investigation due to its extensive implications for the educational, medical, and food industries as well as for hyperactive children and their families. Several medical journals are publishing articles on Dr. Feingold's work (see, for example, The American Journal of Nursing, 1975, 75 (5):797-803).

General pollution also adversely affects children's food, water, and air supplies. For instance, 40% of American community water supplies do not meet U.S. Public Health Service drinking water standards (Profiles of Children, 1970:36).

Lead poisoning (from eating chips of lead pigmented paint, usually concentrated in decaying urban areas) is estimated to affect some 225,000 American children each year, leading to severe and irreversible mental retardation (Snowdon, 1974:92-94). High blood levels of lead (over 50 mcg/dc) exist in up to 10% of all children ages 1-5 and have been correlated to significant emotional, perceptual, and learning disabilities (Klein, 1974:277). Although lead paint is currently felt to be the prime cause of overt lead poisoning, many other sources may contribute significantly to the problem, as our environment is thoroughly contaminated with lead. For example, one study has shown a statistically significant difference between rural and urban samples of fetal blood

lead levels that correlates with the atmospheric lead conditions in the different environments (Gershanik, 1974a:112-113). Further studies of maternal and neonate blood lead levels confirmed this pattern, with urban groups showing much higher lead levels than rural groups (Gershanik, 1974b:508-511). Also, very high levels occur in canned foods and drinks such as infant formulas, baby foods, processed milk products, fruits, fruit juices, and various beverages. Lead may also be found in drinking water, automobile exhaust, air particulates, dirt, cigarette ash, newsprint, and toothpaste. The cumulative effect of these many sources is likely to be biologically significant, particularly for infants and young children (Mitchell, 1974:142-143).

Although the above discussion of nutrition-related problems is by no means exhaustive or complete, one may summarize some of the main issues in American nutrition as hunger and malnutrition; mild to severe vitamin and mineral imbalances; inappropriate diets full of "junk foods;" excess sugar consumption contributing to obesity and dental decay; food additives possibly contributing to behavior problems and learning disabilities; general pollution; and lead poisoning. These factors impair the biological integrity of significant numbers of American children. They take a particularly severe toll on minority group children: blacks, Spanish Americans, American Indians, migrants--in short, upon all disadvantaged populations.

In light of the vast numbers of children implicated in the problems touched upon in this section, one can understand why health and nutrition are of primary concern to education. Too often, teachers as-

sume that the children come to them well fed and completely healthy. Although educators have not traditionally been called upon to deal with the fact that biological integrity is a fundamental prerequisite for sound psychological development, the need for them to address this problem is becoming keenly evident. To reiterate:

> As an organism, the child is not only a mind and a personality capable of being unmotivated, unprepared, hostile, frustrated, understimulated, inattentive, distracted, or bored; he is also a body which can be tired, hungry, sick, feverish, parasitized, brain-damaged, or otherwise organically impaired (Birch and Gussow, 1970:7).

B. Birth and Brain

Some of the most urgent issues in the United States concerning children's health center around the child's wellbeing from conception to age one. The United States' infant mortality rate is an international disgrace; it ranks fifteenth internationally. The infant mortality rate for minorities is two-thirds again as high as that for whites; it is approximately that of white babies twenty years ago. The provisional rates for 1974 are 24.6 for minorities versus 14.7 for whites. The average rate for the population as a whole is 16.5 infant deaths per 1,000 live births (U.S. Health, 1975:338-340). Within single large cities, infant mortality rates are often twice as high among the lowest socioeconomic groups as among the higher groups (White House Conference, 1970:183-184). Thus, in spite of remarkable medical sophistication in maternal, fetal, newborn, and infant care, the United States has great unmet needs in terms of delivering such services to all mothers and infants.

In several countries, virtually all women obtain prenatal care, yet in the United States in 1973 only 70% of all pregnant women began prenatal care before the end of the first trimester. Married women began care much earlier than unmarried ones; only 40% of the latter had any care before the end of the first trimester even though they were predominantly quite young and risks to mother and child were high (U.S. Health, 1975:364). Two crucial aspects of the early phase of pregnancy are that the baby's brain begins to form about the second week after conception--before a woman may even know that she is pregnant--and that the brain's most critical period of development takes place during those first three months. Numerous studies have related high infant mortality rates to inadequate prenatal care and have demonstrated that with proper pre- and postnatal care and improved health services for mothers and infants, these rates can be greatly reduced (Bronfenbrenner, 1974:54). In one study (Dott and Fort, 1975:854) of over 70,000 births, it was found that with no prenatal care the infant mortality rates were four to ten times greater than the rates for women receiving continuous prenatal care (more than nine visits), even when race, poverty, geography, and birth weight were considered. The mortality rates were twice as high for infants born outside of hospitals. The authors concluded that "significant health problems in obstetric and pediatric care continue to exist in the United States."

Teenagers often present significant maternal health problems. One in four girls has a baby before she reaches age 20 and half of these babies are conceived out of wedlock. In 1974, nearly one million teenage

girls became pregnant, and most of them decided to keep their babies. However, 275,000 of these adolescents had abortions, accounting for about 30% of all abortions (over 825,000) performed that year (Arman, 1976:1). Although teenage mothers account for 20% of all U.S. births (Arman, 1976:1),

> Most obstetricians would agree that the major maternal health problems today relate to the teenage mother, including her failure to use contraception or even lack of knowledge of it, poor nutrition, pregnancy out of wedlock, and poor prenatal care (Pearse, 1973:233).

For teenage pregnancies the prognosis for both mother and infant is considerably worse than for pregnancies in general. There are increased incidences of maternal and infant mortality, venereal disease, toxemia, and various complications. Premature and small-for-date infants occur with much higher incidence among teenage pregnancies, and these infants show a considerably increased incidence of mental subnormality and neurological deficit (Osofsky, 1973:886-887).

A major nationwide study of services and needs of teenage pregnant girls (Wallace, 1975:1) showed that contraception and sex education should have high priority in services furnished to sexually active teenagers. Organized family planning services reach only about one-fifth of the youth in need of birth control and an estimated 80% of sexually active teenage couples do not use contraception regularly (Arman, 1976:1). Misconceptions about birth control abound: many teenagers view withdrawal as an effective method, while others think that it is impossible to get pregnant if one takes one pill a week.

Family planning, contraception, and abortion represent significant unresolved issues. Nearly 60% of married women report more preg-

nancies than wanted or pregnancies earlier than wanted (Profiles of Children, 1970:42). Contraception, though generally felt to be far better than abortion, also has its limitations since completely safe and effective means (other than abstinence) have yet to be devised. One example of many (see Guttmacher, 1973:419-460) is that women using oral contraceptives, i.e., "the pill," have significantly increased risks of developing venous, cerebral, and coronary thrombosis than do women of similar age not using oral contraceptives. Also, long term studies are needed to answer serious questions concerning the effect of "the pill" on progeny, its relationship to cancer, etc. (Guttmacher, 1973: 429-433).

It is extremely difficult to even estimate the number of intentional abortions that take place yearly in the United States; figures range from around 800,000 to well over a million (Arman, 1976:1; Hall, 1973:461). With approximately four million babies born each year in this country, that places the abortion:live birth ratio at about 1:4 (Pearse, 1973:240). In countries where abortion is legalized but where modern contraceptives are not available, such as Japan and Hungary, there are as many abortions as live births (Hall, 1973:462). It can therefore be seen that effective contraception is of extreme importance.

A number of studies have found that 10 to 15% of all conceptions result in pregnancy wastage--miscarriage, spontaneous abortion, or stillbirth (Burnham, 1976:42). In addition, although the United States infant mortality rate is gradually declining, the proportion of infants born prematurely and/or with low birth weights seems to be increasing; it

accounts for 8% of all live births (National Academy of Sciences, 1975: 4). Also, 7% of the 2.8 million legitimate babies born in 1962 were reported to have one or more congenital malformations or anomalies noted before the baby left the hospital (U.S. Health, 1975:374). Such infants are "at risk" in comparison with full-term, completely healthy babies, because over 50% of all infant deaths are associated with premature births, low birth weights, and/or congenital malformations. Of considerable importance, the "at risk" survivors have much higher rates of various kinds of disorders than do normal babies (Profiles of Children, 1970:50). Incidentally, in 1974, nearly 10% of all deliveries were performed by Caesarean section (Katz, 1976:11).

It is important to understand the factors that may endanger the highly vulnerable unborn child. Many of these factors are known, including poor nutritional status of the mother, biological immaturity (mother under seventeen), short interval conceptions, low gain in weight during pregnancy, chronic or infectious diseases, etc. However, about 60% of the congenital malformations have an unknown etiology, and many of the common substances and practices of modern civilization are being called into question by teratology--"the study of the causes, mechanisms, and manifestations of developmental deviations of a structural or functional nature that usually but not always originate before birth" (Harris, 1974:996).

A matter of potentially great impact to unborn children is that nearly half of the nation's mothers work outside the home; women comprise about 40% of the U.S. labor force (Bronfenbrenner, 1974:53; Burnham, 1976:42). Yet, until very recently, virtually all studies of

occupational health concerned men. Even so, a statistic with sobering teratological implications is that of the 80 million workers in this country, almost one-half are exposed to significant levels of known toxic substances (Carnow, 1975:503). Furthermore, recent studies suggest that all known carcinogens are mutagens as well (Burnham, 1976:42).

The Labor Department estimates that five million women are holding hazardous jobs. A further federal study reports that a minimum of one million fetuses accompany their mothers to the workplace daily and are "exposed to a variety of work conditions--both safe and unsafe" (Burnham, 1976:42).

Measures that originally directed attention to the potential impact of the workplace on women were the considerable percentage of conceptions which resulted in pregnancy wastage (10-15%) and the growing percentage of infants born prematurely, with low birth weights (8%), and/or with birth defects (7%). Although other factors, such as the rise in numbers of teenage mothers, also contribute to these figures, it appears that more serious study will need to be focused on women's occupational health and its special significance for unborn children. The fetus is the most vulnerable of all human beings and is often the first to manifest the damage of environmental insults.

Teratology--the study of factors that may endanger the fetus--demonstrates the need to carefully monitor the internal and external chemical environments of pregnant women. Drugs, alcohol, tobacco, and possibly even food additives--all widely used substances--may have deleterious effects on the fetus.

The average American woman takes at least four drugs during

pregnancy, not counting home remedies and vitamin supplements, and many take far more. Dr. Virginia Apgar sums up this situation as follows:

> Until scientists understand much more clearly than they do today how chemicals affect the child in the womb, all drugs are suspect--everything from aspirin to zinc oxide. Not even a time-honored home remedy such as a little baking soda taken for heartburn can be considered perfectly harmless (cited in Brody, 1970:2-4).

Drug abuse of LSD or marijuana by either parent even prior to pregnancy can increase the child's risks of deformations and death. In experiments on monkeys, the incidence of deformed young increased even when only the father had been given LSD prior to conception (Brody, 1970:4). In a study involving human subjects, marijuana caused chromosome breakage, and the degree of use did not seem to affect the chances of chromosome breakage, inasmuch as "light" users showed a similar incidence to "heavy" users. Both "light" and "heavy" users showed increases in the numbers of cells with abnormal chromosome configuration in comparison to non-users (Stenchever, 1974:106-113).

Many people fail to regard alcohol as a drug, yet it certainly is one, and it readily passes through the placenta. Infants of alcoholic mothers have an increased incidence of mortality, miscarriages, stillbirths, prematurity, low birth weights, mental deficiencies, and neurological and psychiatric disorders (Green, 1974:713-716). In fact, damage to the fetus by chronic maternal alcoholism is one of the most common recognizable causes of mental deficiency. In addition, alcoholics are very often malnourished (Greene, 1976).

The research strongly suggests that even relatively low levels of drinking may have subtle effects, such as poor growth of the baby

before delivery. Moderate drinkers who average about two cocktails a day produce babies whose average weight is 180 grams less than those of non-drinkers. This is a similar impact on birth weight as that caused by heavy smoking by the mother (Greene, 1976).

In 1975, a nationwide survey of adolescent drinking habits indicated that one-third of teenage girls are "moderate" to "heavy" drinkers (Greene, 1976). With an estimated two to four million female alcoholics in this country--a number that is rapidly increasing--the matter of alcohol's effects on the unborn presents no small problem (Colen, 1975:1).

Cigarette smoking, which is also on the increase among women, adversely affects the unborn child. Thirty percent of American women smoke and they average about a pack (20 cigarettes) per day (Young, 1976:4). A study of 50,000 pregnancies showed that babies born to smoking mothers tend to weigh one-half pound (227 grams) less than babies of non-smoking mothers, and that the more the mother smokes, the smaller the baby is likely to be. Since that study, pregnant women have been advised to stop smoking, and if they cannot stop, to cut down on the amount as much as possible (Brody, 1970:5).

In light of the increasing rates of mental illness, a study of the course and outcome of pregnancy in 400 women with neuroses (Bahna and Bjerkedal, 1974:129-133) reveals some disturbing statistics. Infant mortality and hypoxia at birth were significantly greater and there were three times as many malformations, diseases, and birth injuries among infants of neurotic mothers than in the normal population. The rates were also twice as high for toxemia during pregnancy, vaginal hemorrhage, induced labors and complicated labors; and the mean birth weight was 160

grams less than in normal cases. Clearly, the children of neurotic women are "at risk," even before postnatal psychological interaction begins.

Infant accidents are a leading cause of death and disability. The risk of death in the first year of life is higher than for any other age group under 65 (Profiles of Children, 1970:50). Nearly 75% of all infant deaths now occur within the first twenty-eight days of life, with approximately 60% occurring within the first two days, 15% in the remaining twenty-five days, and 25% during the rest of the first year (U.S. Health, 1975:346; White House Conference, 1970:156-158). Suffocation causes 50% of the deaths, motor vehicles 20%, and fires, falls, and drowning the other percentage (Metropolitan Life Statistical Bulletin, July 1975:9-11). As most accidents are preventable, parents need to be made more aware of the hazards to which infants and young children are exposed.

In addition to the magnitude of human suffering and loss implicated in infant deaths, the strictly financial costs of fetal and perinatal casualties are appalling. The total cost of care for individuals with major disorders stemming from prenatal and perinatal damage was estimated by HEW in 1971 to be $13 billion annually. The yearly loss of income to the community due to fetal and neonatal deaths was estimated to be an additional $15.5 billion (based on 1970 perinatal mortality rates and 1970 average salaries that would have been earned by individuals if they had survived). At this point, the federal government spends more than fifty times as much money on "after-the-fact" rehabilitative or curative programs than it spends on preventive efforts. When far

more resources are invested in truly preventive services, the above losses should be dramatically reduced (Wallace, 1974:25-27).

A vivid example of this approach is in the realm of genetic disease. The following statistics are presented in a 1975 government publication entitled, "What Are the Facts about Genetic Disease?". The economic gain from screening and prevention exceeds by ten to twenty times the cost of caring for genetic disease victims. This payoff has prompted forty-eight states to require screening of newborns for PKU and certain other genetic diseases. Another reason why it is of crucial importance to prevent genetic defects is that "no genetic disease has yet been cured, in the strictest sense of the word, nor is any likely to be rendered curable very soon" (pp. 26-29).

Twelve million Americans, an estimated 7 or 8% of the population, are adversely affected by some form of heritable disease. An additional 10 to 12% have enzyme abnormalities or genetically determined idiosyncracies which cause adverse reactions to many commonly used drugs. The above estimates do not include the many conditions having genetic involvement of some sort, yet which are not felt to be primarily genetic, such as certain forms of diabetes, arthritis, cancer, heart disease, and mental illness (p. 6).

In about 5% of all live births, genetic defects are present. This incidence has led to the development of widespread screening and counseling services. It is now possible to diagnose sixty serious genetic disorders before birth, and to identify carriers and high risk populations. Genetic counseling and comprehensive screening are likely to become increasingly sophisticated and universal as they currently

provide the most effective intervention in the handling of genetic diseases (pp. 6, 23).

One of the most common results of birth defects is mental retardation. This condition is defined as "significantly sub-average general intellectual functioning existing concurrently with deficits in adaptive behavior which are manifested during the developmental period" (Office for Handicapped Individuals, 1975:1). It affects about three million people under the age of twenty and causes more severe disability among children than any other physical or mental abnormality, affecting about 5% of the total population (White House Conference, 1970:275).

Only one-fourth of the cases can be directly linked to specific birth traumas, infections, or genetic abnormalities. In the remaining cases, suspected causes are inadequate prenatal and perinatal health care, poor nutrition, and adverse socioeconomic conditions resulting in severe cultural deprivation (Profiles of Children, 1970:51). The President's Commission on Mental Retardation (White House Conference, 1970: 197, 277) wrote that most mental retardation could be prevented by providing essential health care services and an educational program for parents and very young children emphasizing the developmental learning experiences necessary for proper mental growth. This approach would address the root causes, hopefully reaching the child early enough to prevent both structural and functional retardation.

Although such a comprehensive approach may appear costly at first, in the long run there should be considerable savings, both in terms of human lives and tax dollars. At present, it costs taxpayers

over a half billion dollars per year to operate public facilities for mentally retarded people, although only 10% of the mentally retarded population is institutionalized, and outpatient services such as special education reach only a fraction of those needing them. For example, not more than 60% of the retarded children in any state are receiving special educational services (Office for Handicapped Individuals, 1975:11-13; Tarjan, 1973:372).

In summary, with over six million mentally retarded persons in the United States, half of whom are under twenty, and with an additional two hundred thousand mentally retarded babies being born yearly, there is a critical need for comprehensive programs to address the real roots of the problem, thereby effecting true primary prevention (Profiles of Children, 1970:51).

C. Diseases

In the United States, mortality rates for children ages 1-4 have decreased by more than 95% since the 1900s, largely as a result of improved nutrition and sanitation, the development and widespread administration of vaccines, and the introduction of sulfonamide and antibiotic therapy; all of which served to greatly reduce children's risk of dying from various communicable diseases (U.S. Health, 1975:340).

The preventable nature of children's deaths can be seen by contrasting U.S. statistics with those of Latin America. In Latin America there is excessive mortality in early life: close to 40% of all deaths are of children under five years of age, as opposed to 4% of all deaths in the United States. Not only is child mortality ten times as high,

but maternal death rates are also ten times greater in many Latin American countries than in the United States. The death rates for enteritis and other diarrheal diseases in South and Middle America are over 40 to 90 times higher than in North America (Pan American Health Organization, 1973:17-30).

Clearly, improvements in nutrition, sanitation, education, and medical care can contribute significantly to the reduction, prevention, and ultimate eradication of disease. One example of this is the use of immunizations in the control of communicable diseases. However, at present, the United States is far short of its goal of immunizing all children against diseases for which protection has been developed. In the past ten years, the level of protection against polio has decreased to the point that less than half of the minority children under five, and only 60% of all children under 15 are protected. Less than 60% of all children ages 1-4 are immunized against rubella. One potential danger is that an infected child can easily infect a mother who is pregnant with another child and thus cause congenital malformations in the unborn child. Protection against diphtheria, typhoid, and pertussis is universally recommended in the first year of life, yet only 75% of the children ages 1-4 in the United States have such protection (U.S. Health, 1975:276-280).

Despite all public health efforts, some serious communicable diseases are not under control. For example, in the United States, gonorrhea ranks first and syphilis ranks third among communicable diseases. It is estimated that 2.7 million cases of gonorrhea occur each year, and that 450,000 persons are in need of treatment for syphilis (includes all stages) at the present time. Also, nearly 60,000 cases of infectious

hepatitis were reported in 1974. This state of affairs has grave implications for infants and children as well as for teenagers and adults (U.S. Health, 1975:258-270).

Currently, the leading causes of death in the United States for children ages 1-4 years are (in rates per 100,000): accidents, 31.9; congenital anomalies, 9.6; cancer, 6.4; influenza and pneumonia, 5.9; and homicide, 2.5 (U.S. Health, 1975:359). As accidents, congenital anomalies, and homicide are discussed in other parts of this chapter, the present discussion will focus on cancer, influenza, pneumonia, and chronic diseases.

Cancer kills more children in the United States than any other disease and it is on the increase among children as well as adults (U.S. Health, 1975:359). Major suspected causes are the ubiquitous pollutants that permeate our air, water, and foods. The annual cost of environmentally induced diseases in the United States (health service, loss of wages, compensation, and rehabilitation) is estimated at $35 billion dollars (Kotin, 1974:782-785). Ignorance of the chronic and acute effects of man-made biological, chemical, and physical agents in the environment is extensive. Over 30,000 synthetic chemicals are in use today, of which less than 7% have been reliably tested as to whether they are a cause of cancer. Nearly 4,000 of these chemical compounds are intentionally placed in our food supply (and many more are eaten inadvertently, i.e., pesticides and the like) and not one of these food additives has been subjected to the rigorous tests required for pharmaceutical drugs. An indication of the magnitude of this potential hazard is that over a billion pounds of food additives are produced annually in

the United States and the average American consumes five pounds of these questionable substances each year (Feingold, 1974:135, 161). As Dr. Feingold sensibly comments,

> A million or more years have gone into the development of the superb and intricate machinery of the human body. From my point of view, it is a little too much to ask these mechanisms to accept such radical environmental changes in a period of a little over a hundred years. Penalties have already been exacted and will continue to be exacted (1974:136).

Not only is our food supply replete with questionable chemicals, toxic matter is being released into the air at a rate of three-quarters of a ton per person per year. This air pollution--over 142 million tons each year--comes from some 90 million motor vehicles and from factories, power plants, municipal dumps, and residential incinerators (Hanlon, 1970:384). Also, about 50% of American children are subjected to the persistent pollution of tobacco smoke in their home environment. These children have a greater prevalence of acute illness, especially respiratory conditions, than do the children of non-smokers. "One now has to raise the specter of smoking harming not only the health of the smoker but also the health of his progeny" (Cameron, 1969:340; Cameron and Robertson, 1973:142-147). It is public knowledge that the person who smokes, in any form, has 6 times the risk of dying of lung cancer as a non-smoker; and one who smokes two or more packs per day has 20 times the risk of a non-smoker (Gonzalez, 1976:32). But how many parents realize the implications for children? Inhaling someone else's cigarette smoke affects the non-smoker in much the same way as it affects the smoker. Indeed, studies suggest that the smoke drifting off the end of a cigarette contains even more tar and nicotine than that which

the smoker inhales (American Lung Association, 1973:2). In spite of this, Americans smoked a record 610 billion cigarettes last year (Young, 1976: 4).

The National Cancer Institute estimates that at least 90% of cancers are extrinsically induced, and that they are frequently caused by a complex of environmental factors. Smoking is known to be a major factor in the 80,000 lung cancer deaths that occur each year; and diet is thought to be heavily implicated in the 50,000 intestinal cancer and 30,000 breast cancer deaths that occur yearly. In all likelihood, cancer will continue to be a major cause of death for both children and adults until its exact etiology is understood and the adverse conditions that produce it are corrected (Gonzalez, 1976:30-33).

After cancer, influenza and pneumonia cause more deaths among children ages 1-4 than the next four causes combined (U.S. Health, 1975: 359). Influenza nd pneumonia cause three times as many deaths among minority children as among white children (Profiles of Children, 1970: 112) and account for four times as many deaths among the 1-4 age group as among the 5-14 age group (U.S. Health, 1975:359). This higher proportion of deaths among minorities than among wealthier groups implicates poverty, poor housing, urban pollution, lack of medical care, etc. Parent education could be critical in enabling parents to identify illnesses early and to seek prompt medical attention for them. It may also contribute to prevention through education concerning sanitation and nutrition.

Preschool children have a higher incidence of acute illnesses than any other age group, a rate more than twice as high as that for

adults over 25. Young children suffer approximately three such acute conditions per year, and more than half of the cases are respiratory infections (U.S. Health, 1975:392-394). Diseases of the respiratory system are the most frequent reason for children's hospitalization, accounting for 30% of all hospital entries; whereas accidents, poisonings, and violence account for 15% (U.S. Health, 1975:414).

Fourteen million of the approximately 70 million children under 15 have some kind of chronic condition, and over 1.5 million have asthma (Harvey, 1975:26). The five leading causes of activity limitation due to chronic conditions are asthma and hay fever, 20%; serious orthopedic impairments including complete or partial paralysis, 16%; chronic bronchitis and sinusitis, 6%; mental and nervous conditions, 4%; and heart conditions, 4% (Vital and Health Statistics, 1967:9). Considerable work remains to be done in the prevention, correction, and management of chronic conditions. One area of great promise is that of training parents to assist in the treatment of children's chronic conditions in the hospital and at home (see Brazelton, 1976:197-219).

D. Accidents

In the United States, accidents are the major health hazard for children ages 1-4, claiming more lives than the next ten leading causes of death combined. Accidental deaths account for more than 40% of all deaths in this age group. Fatalities related to motor vehicles (including pedestrians) are responsible for 30% of preschoolers' deaths. Other causes, in rank order, are drowning, fires, inhalation and ingestion of food and other objects, poisoning, falls, and firearms.

Accidents are also a major cause of disability among young children. In 1973, seven million children under six years of age--more than 30% of all children in that age group--suffered injuries requiring medical attention or involving at least one day of restricted activity. Two-thirds of the nonfatal injuries occurred in the home. In the same year, more than 4,300 children ages 1-4 died as a result of accidents, a death rate of 31.9 per 100,000 (Metropolitan Life Statistical Bulletinl May 1975:7-9).

Infants also suffer a high accident mortality rate: 54.3 per 100,000 live births. Suffocation caused 50% of all infant deaths. Obstructions were from vomitus, milk and liquid food; objects such as safety pins, buttons, marbles, and small parts of toys; mechanical suffocation by smothering in bedclothes or plastic materials, and strangulation from structural defects in cribs and playpens. Almost half of the infants who sustair d fatal injuries were less than four months old. Motor vehicle accidents caused 20% of infant deaths; and fires, falls, and drowning were the next frequent causes of death (Metropolitan Life, July 1975:9-11).

Among school age children 5-14, accidents are by far the leading cause of death. The accident mortality rate of 21 per 100,000 is four times as high as the next leading cause of death--cancer--at 5.4 per 100,000 (U.S. Health, 1975:361). Over 50% of the total mortality among boys and almost 40% of the total mortality among girls are due to accidents. A full half of these deaths involve motor vehicles. Other causes include drowning, fires, firearms, and falls.

The toll of disability is also heavy. Each year, 18 million

children ages 6 to 16--nearly 40% of all children in that age group--suffer injuries serious enough to warrant medical attention or at least one day of restricted activity. Over 40% of these non-fatal injuries are sustained in and around the home (Metropolitan Life, December 1973: 9-11).

Most accidents are preventable. Their prominence as a cause of death and injury among children of all ages, and the fact that most accidents occur in and around the home, highlight the need to make parents more aware of the hazards to which their children are exposed. Special attention must be given to protecting children under six, as many accidents result from their being left with inadequate supervision. For example, in 1970, over 67,000 building fires were caused by children playing with matches (Metropolitan Life, December 1973:6-9).

The parents of infants need to be particularly sensitive to not leaving the baby alone for a moment, not even to go answer the telephone. Suffocating, drowning, poisoning, and falling can take place in seconds. Even if not fatal, that moment's oversight can result in severe impairment. It is estimated that each year, 1.75 million infants sustain at least one accidental fall during the first year of life--chiefly falls from cribs, high chairs, infant seats, changing tables, and adult beds. Most of these incidents could be avoided, not only by increased parental vigilance, but also by imposing long overdue safety regulations upon the manufacturers of children's furniture, toys, automobile safety restraints, and a myriad of other products which are unnecessarily dangerous (Metropolitan Life, July 1975:11).

A comprehensive approach to accident prevention would need to

take a wide array of factors into consideration, including all people responsible for arranging children's environments: parents, teachers, manufacturers, architects, and many others. Although older children should learn basic safety measures and first aid, the major responsibility for all children's protection rests upon the adults. Therefore, the Anisa Model envisions an adult training program for all parents and teachers with emphasis on the arrangement of safe home and school environments, appropriate adult supervision of children, and necessary first aid skills. Areas of specific concern to accident prevention include automobiles, traffic, city planning, architecture, clothing, furniture, toys, television, housing, drugs, foods, and all household articles: from chemicals to appliances. Economics and priorities must be carefully considered.

E. Physical Handicaps

Two million American children--3% of the child population--have orthopedic handicaps. Early intervention in the preschool years could prevent or correct at least 30% of these conditions, and continuous care up to the age of 18 could correct at least 60% of these conditions. Yet, in the age group of six to eleven, resources are available and utilized by only 44% of the children needing treatment; and in the age group of 12 to 17, by only 85%. In addition to strictly orthopedic conditions, an estimated 10 to 20% of all children suffer from other kinds of chronic handicapping conditions. Many, if not most, of these could be prevented or corrected (White House Conference, 1970:157, 184; U.S. Health, 1975:389). However, the present system often misses

them because of its fragmented hit or miss nature: in 1973, one-eighth of non-poor and one-fifth of poor children had not been seen by a physician for at least two years. Many children arrive at school having had no medical supervision from the time of birth on. This is crucial in the case of orthopedic difficulties because many can be corrected at a very early age but cannot be corrected if left until later (U.S. Health, 1975:408; White House Conference, 1970:185).

F. Vision, Hearing, and Speech Impairments

An estimated 20% of American children--over 12 million--need special care for eye conditions (White House Conference, 1970:157). About 10% of children up to age 12 have defective vision, and over 20% of children ages 12 to 17 do (U.S. Health, 1975:401). Disadvantaged children have twice the incidence of eye defects as the general population. As many as 75% of mentally retarded, 70% of cerebral palsied, and 60% of hearing impaired children also suffer visual defects (Lin-fu, 1971:4).

Preschool vision screening is done on only a small fraction of the total population. Universal screening is highly desirable because 2 to 6% of young children have amblyopia ("lazy-eye blindness") and an estimated 5 to 20% of preschoolers need eye care for other reasons. Visual disorders can interfere seriously with learning and yet children, unlike adults, are very often unaware of their handicap and therefore cannot seek help (Lin-fu, 1971:6).

The incidence of blindness among young people under 20 has remained virtually the same through the past decade. There are about

44,000 blind children (under 20) and the yearly sum spent for various aids to mitigate their blindness is $75 million. The total future expenditure for them is estimated at $1.5 billion (Profiles of Children, 1970:31).

The causes of visual disorders require further research; however, early eye care is a much needed preventive measure that has immediate educational implications and is presently technologically and economically feasible in the United States.

An estimated 5% of all school age children--some three million--have some degree of hearing loss, and one million children have quite serious hearing losses (Alexander Graham Bell Association for the Deaf, 1975:1-3). Resources are not available to serve even half of these children (U.S. Health, 1975:389).

Over three million children have speech problems (White House Conference, 1970:157). In the age group of six to eleven, 10% of the boys and 7% of the girls have speech defects (Profiles of Children, 1970:99). Again, available resources serve less than half the needs (U.S. Health, 1975:389). Hearing impairments can and should be detected in early infancy so that corrective measures can prevent serious speech problems from arising. The following quote demonstrates the importance of very early intervention:

> By the age of two, the child has a well-established pattern of deriving relevant information from his environment. If sound has not been a part of that pattern from early infancy and he has not learned its value in enabling him to function in his world, it will be extremely difficult to get him to accept sound as an integral part of his perceptual system (Heinze, 1975:21).

Resources must be poured into the neglected very early age groups because by the time a child reaches school age all kinds of permanent problems related to speech and hearing are quite likely, including social estrangement, psychological difficulties, and almost certain reading disabilities. Early intervention measures will be discussed in subsequent chapters.

G. Emotional Disturbances

Emotional and mental illnesses are major child health problems. Although boys are more acutely affected than girls, roughly 30% of all children have school maladaptation problems ranging from mild to severe. In some quarters the figure is as high as 70%. The absolute numbers thus implicated are staggering (Cowen, 1971:723).

The 1970 White House Conference on Children reported that one out of three poor children had serious emotional problems that required attention (Profiles of Children, 1970:29), and that over 11% of all school age children had moderate to severe emotional problems requiring some type of mental health service (White House Conference, 1970:275).

Less than half of the children needing mental health services are receiving them (White House Conference, 1970:184), and only 5% of the children needing psychiatric care are receiving it (Profiles of Children, 1970:29).

It is estimated that one out of ten, or 18 million adults are mentally and emotionally ill and in need of professional treatment, whereas only about 10% of this number receive treatment. Also concerning adults, the National Association of Mental Health estimated in 1963

that at least 50% of all medical and surgical cases treated by private physicians and hospitals have an emotional complication [emphasis mine] that is often a central contribution to the illness (Adler, 1968:40-41).

H. Social Pathology

Family breakdown is having a profound impact on children. Of every five divorces in the United States today, three are characterized by the presence of children; and if the present rates continue, one child in six will lose a parent through divorce by the time he is 18. As of 1974, there were approximately 8 million "reconstituted" families which involved over 7 million children in learning to live with new step-parents. In 1965 alone, marital terminations exclusive of death involved over one and one-half million people, including children (Duberman, 1975:2-3; Bronfenbrenner, 1974:53).

In 1970, '0% of all children under six--over two million of them--were living in single-parent families with no father in the home. Among families in poverty, almost half of all children under six were living in single-parent households (Bronfenbrenner, 1974:53). By 1975, over eight million children under 15 were living in single-parent families (Mondale, 1975:XII).

Divorces are not the only factor affecting the stability of family life. Today, nearly half of the nation's mothers work outside the home. One in every three mothers with preschool children is in the labor force and about half of these mothers have children under three years of age (Bronfenbrenner, 1974:53; Metropolitan Life, 1973:1)

Minority families are in a particularly critical situation.

Seventy-five percent of the black population now lives in cities (White House Conference, 1970:160). Of all black children, 53% live in families below the poverty line; the corresponding figure for white children is 7% (Bronfenbrenner, 1974:53).

Racism and poverty are major causes of children's deaths, disabilities, and poor health in this country. For instance, approximately one out of three American Indian babies dies between the ages of one month and one year, largely from preventable diseases, and those that survive have a life expectancy of 43 years (White House Conference, 1970:155).

The mortality rate for minority infants today is approximately equal to that of white infants 20 years ago. Today it is two-thirds again as high as the rates for white infants. Provisional rates for 1974 are 24.6 for minorities versus 14.7 for whites (infant deaths per 1,000 live births). The death rate for minority preschool children is also 50% higher than the rate for white children (U.S. Health, 1975: 338-340).

Illegitimate births are alarmingly common. In 1968, nearly one out of every ten 17 year old girls in the United States was a mother. And for 15% of the estimated 210,000 school age girls under the age of 18 who gave birth in 1971, the baby born that year was not their first (Kruger, 1973:4). An illegitimate birth means a higher than usual risk of dying in infancy for the newborn and frequently means social problems for both mother and child. Many of these mothers are children themselves; in 1973, over half of them were under age 20 and 30% were under age 18 (U.S. Health, 1975:362). Sixty percent of these mothers were

married by the time the child was born (the teenage divorce rate is three or four times higher than the national average), and married or not, the majority kept their child (Kruger, 1973:4). By 1974, one in four girls had a baby before she reached age 20, and half of the babies were conceived out of wedlock (Arman, 1976:1). There is no doubt that most teenage mothers and their children face exceptional difficulties. A recent nationwide study of the needs of pregnant teenage girls found that of the 130 cities surveyed, about 100 provided some form of social service and special education to pregnant girls; however, relatively few provided special services for fathers (37), day care for infants (33), maternity home care (42), or even pregnancy testing (43). The investigators concluded that "pregnant teenage girls need many services they do not get" (Wallace, 1975:1-4).

One area of great need is for adoption, foster care, and protective services. More than 300,000 American children are in foster care; 100,000 have no hope of returning to their own parents; and 50% of all children in foster care are there because of parental neglect, abuse, or exploitation (Beck, 1971:59-71). In 1968 alone, some 166,000 children were adopted, of which more than 100,000 had been born out of wedlock (Profiles of Children, 1970:55).

As the social fabric of family life rapidly deteriorates, children's wellbeing is increasingly threatened. Not only is the divorce rate skyrocketing, but in many cases both parents refuse to take custody of the children. Neither one wants them (Bronfenbrenner, 1974:55).

In 1970, nearly half a million American children and youth resided in child caring institutions (Gula, 1973:1267):

150,000 in detention centers and training schools for delinquent youngsters;
98,000 in homes for neglected and dependent children;
95,000 in facilities for mentally retarded children;
37,000 in resident facilities for physically handicapped;
28,000 in general hospital psychiatric wards;
27,400 in public mental hospitals;
15,000 in group homes;
15,000 in children's treatment centers;
8,400 in private mental hospitals; and
7,000 in maternity homes for adolescent unwed mothers.

TOTAL: 480,800

Unfortunately, most of these institutions are rather grim operations. Martin Gula, a respected expert on the subject, estimates that

> . . . only 25% of the children receive a sufficiently constructive and therapeutic level of care, at least 25% receive less than minimum adequate care and services, and 50% receive minimum adequate care, but not necessarily much beyond that (Gula, 1973:1270).

Another indicator of family disintegration and profound social pathology is child abuse. Although it is difficult to estimate the exact magnitude of child abuse and neglect, a 1970 survey projected a nationwide total of from two to four million battered children (Bronfenbrenner, 1974:55). In addition, it is estimated that the proportion of neglect to abuse may be as high as ten to one (Kadushin, 1974:282-283). More than 90% of the incidents took place in the child's home (Bronfenbrenner, 1974:55), and over 30% involved children age three or younger (Profiles of Children, 1970:112).

Not counting accidents, homicide is the fourth leading cause of death among children under 15 (U.S. Health, 1975:359). Some researchers feel that many accidents (which are by far the leading cause of death) may not only be the direct result of gross parental neglect, but more grimly, that a certain percentage of the cases presented as accidents

may actually be willful abuse in disguise. Therefore, they advocate careful investigation of all suspicious cases to determine whether child abuse rather than purely accidental injury is involved, for the purpose of early identification of abusive parents and provision of necessary protective services to endangered children (Smith and Hanson, 1974:666-670).

Another example of unmet needs regarding the protection of children in the face of pathology is alcoholism. Alcohol is implicated in half of the highway fatalities and half of all homicides each year in the United States (Wechsler and Thum, 1973:34). There are an estimated nine million alcoholic adults in the United States, and an estimated 36 million family members whose lives are directly affected by the alcoholics' conditions (Kellermann, 1974:9). One-fourth to one-half of all alcoholics have had an alcoholic parent or close relative. In addition, the children of alcoholic parents are twice as likely to become alcoholics as the children of non-alcoholic parents. Programs such as Alcoholics Anonymous and Al-Anon give supportive assistance to the alcoholic and the spouse. However, the needs of children are rarely addressed by such support groups, or even by professionals treating the alcoholic parents. The very few scattered services that are available to children of alcoholic parents tend to ignore the younger children, youngsters who are seldom able to actively seek help (Hindman, 1975/76: 2-6). If the cycle of pathology is to be broken, we cannot afford to ignore the need for preventive and supportive services for children, as well as for youth and adults.

I. Implications for Educational Planning

The scope of health problems and nutritional deficiencies in this country and their effects upon the education of children are just beginning to dawn on the policy makers of American educational institutions. At one extreme, the situation in the developing world is obvious: malnutrition in early childhood is recognized as the world's dominant public health problem. Up to two-thirds of the total 400 million preschool age children--10% of the total world population--are suffering from various degrees of malnutrition that diminish their ability to withstand infection and impair their subsequent physical and mental development (Jelliffe, 1972:595). This grim picture confronts anyone who is seriously concerned with the education of children on a global level. There is little question that at least half of them are in sub-optimal health, and therefore lack the vigor and energy to maximize their potentials, regardless of any educational opportunities they may or may not have.

The problem in the United States assumes greater proportions than the public generally realizes. An estimated 15%, or ten million American children, suffer significant malnutrition. Millions more suffer other health problems (White House Conference, 1970:160). Dr. Herbert Birch has studied this problem in America in great depth and is perhaps the most eloquent spokesman on the impact of poor health and nutrition upon learning. An analysis of his extensive research leaves no doubt that children who are in suboptimal states of health for any reason are exposed to massively excessive risks for maldevelopment (1968:595). He calls upon the makers of public policy to consider the health of the

child as a factor of primary importance in educational planning:

> It is this physical child to whom we are directing attention. We [cannot ignore] the intimate relation between the biology of the child and the characteristics of his environment in defining his functional capacities . . . society can no longer afford to deal with cultural influences as if they were acting upon a non-material being. The child who is apathetic because of malnutrition, whose sequence of prior experiences may have been modified by acute or chronic illness, whose selectivity as a perceiver and whose organizing ability as a learner may have been affected by previous exposure to risk of damage to the central nervous system, cannot be expected to respond to opportunities for learning in the same way as does a child who has not been exposed to such conditions; for the effect of environment on any organism is never merely the objective situation in which he finds himself, but is rather the product of an interaction between his unique organismic characteristics and whatever opportunities for experience his objective surroundings may provide. Thus there is no reason to think that we can fully compensate the child handicapped by an existing biologic disadvantage merely by increasing his objective opportunities for learning in school settings. In the light of such an understanding, we cannot afford to ignore the biology of the child in educational situations (Birch and Gussow, 1970: 7-8).

The following chapter offers a novel approach to solving the problems raised above. The Anisa Model, a comprehensive plan for educational renewal, is presented and proposed as a means of preventing children's health problems at the "grassroots" level--by emphasizing biological integrity as an essential prerequisite to children's psychological development; and by educating parents and teachers to create and sustain optimum levels of health in children.

CHAPTER TWO

RESOLUTION OF THE PROBLEM: THE ANISA MODEL*

A. The Philosophical Foundation of the Anisa Model

The Anisa Model is a blueprint for a comprehensive educational system based upon organismic philosophy and a coherent body of derivative theory. Its major function is to place education upon a scientific foundation. The word "Anisa" comes from a Latin and Greek root word that represents the tree of life, an ancient symbol which connotes the qualities of beauty, grace, nurturance, shelter, and perpetual cycles of fruition; qualities which have a rich significance for an organismic conception of education (Jordan, 1975:6).

In the report of the Commission on the Year 2000 of the American Academy of Arts and Sciences, a "vast overhauling" of today's educational system is called for: "try to imagine what kind of educational system we will need by the year 2000. Can anything short of an educational revolu-

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*The subsequent discussions on the Anisa Model, its philosophical base and theories, draw heavily upon the work of its director, Dr. Daniel C. Jordan, and fellow Anisa staff members. I wish to state at the outset that as further information and documentation on the Anisa Model may be found in the references, no attempt is made in the present text to substantiate every proposition in detail. As the Anisa Model represents a team effort over fifteen years, the following discussions of philosophy and theory largely reflect the fruit of that long-term endeavor and are not the original work of the present author. However, they provide the theoretical foundation essential to the original contributions concerning health and the biological potentialities, thus their inclusion. Also, the pronoun "we" is used throughout to refer to the Anisa staff (as on page 42), and, where appropriate, in references to the Anisa Model. Anisa is pronounced ă-nē-să (ă as in adore).

tion meet our needs?" (Miller, 1967:889). In response to that need, an interdisciplinary team of scholars, scientists, and artists have labored for fifteen years to produce a coherent frame of reference within which education may emerge as a science. The organismic philosophy of Alfred North Whitehead (1969) has provided the comprehensiveness, coherence, and explicitness necessary to conceptualize a comprehensive educational system capable of meeting the challenges of modern life and of the future.

The importance of a philosophical base to such an undertaking is explained by Lewis Mumford as follows:

> Every transformation of man . . . has rested on a new metaphysical and ideological base; or rather, upon deeper stirrings and intuitions whose rationalised expression takes the form of a new picture of the cosmos and the nature of man. . . . To effect a new transformation of man, we must be informed by a philosophy capable of uniting every aspect of human experience, and directing human development through every phase (1956:231-232).

We found the organismic philosophy of Alfred North Whitehead--in itself an extraordinary synthesis of 2,500 years of both Eastern and Western thought--to be the most "capable" conceptual scheme to serve as a foundation for the construction of an educational system meant "to effect a new transformation of man" and thus to ensure the advancement of civilization to the year 2000 and beyond. Whitehead's cosmology, Process and Reality (1969), explicates specific first principles that provide the basis for the integration of a vast amount of knowledge concerning human growth and development. The Anisa Model, in striving to place education upon a scientific basis, has sought to organize this extensive body of knowledge and research into a system that can actively effect positive change in children's lives. For this reason, the Anisa Model has invested long-term, scholarly efforts involving multi-disciplinary collab-

oration into the creation of an overarching theory of education. Huxley referred to this primary theory construction as answering the essential need for noetic integrators--"symbolic or conceptual constructions which serve to interpret large fields of reality, to transform experience into attitude and unify factual knowledge and belief" (Jordan and Streets, 1973:290).

In medicine, it is well understood that "the development of abstract theory precedes the understanding of fact" (Whitehead, 1971:75). Medicine has therefore been able to draw upon vast bodies of basic research in the physical and biological sciences and to apply this detailed knowledge to the solution of medical problems. In the same way, a clearly articulated, coherent theory of human development enables one to synthesize extensive information from several "mother" disciplines such as the biomedical sciences, the humanities, and the social sciences and to apply these findings directly to educational practice. The crucial role of such an integrative approach can be seen from the following quotation:

> Although articles and reports of all kinds abound concerning the nutritive requirements of the expectant mother and the newborn infant, no one has extracted and integrated the findings as they pertain to education and introduced them into systematic educational planning for schools and communities. It usually takes about a generation for new discoveries and techniques of one science to become a part of the regular working tools of other sciences. It takes a considerably longer time for such findings to become familiar to the layman and to exert any significant influence upon his life and way of thinking. Within the Anisa Model, it is the role of educational specialists and related community agencies to bridge the gap between discoveries and their application, especially when these discoveries directly influence child growth and development (Raman, 1974:330).

The Anisa Model represents a blueprint for change, a comprehen-

sive plan for educational renewal. From its explicit philosophical base have been generated theories of development, curriculum, pedagogy, administration, and evaluation. We feel that these powerful and comprehensive theories that have arisen from the conceptual merging of several diverse disciplines hold similar implications for education as such major theories as the theory of relativity and the theory of evolution held for physics and biology. Whitehead (1971:39) wrote that "speculative reason produces that accumulation of theoretical understanding which at critical moments enables a transition to be made toward new methodologies." We feel hopeful that the Anisa Model may provide the theoretical foundation upon which education may emerge as a science, thereby enabling us "to create an educational system that maximally fosters growth and development" (Jordan and Streets, 1973:291).

B. The Anisa Theory of Development

The Anisa theory of development is derived from the explicit philosophical base of the Model. Its first principles are organismic in nature and have direct bearing upon the present discussion. They may be summarized as follows: man is a conscious and purposeful being; he has infinite potentialities which are actualized through interactions with environments; his reality is therefore seen in terms of the process of his becoming, i.e., that man, by virtue of his capacity to further extend his potential, is capable of advancing beyond his present limits; and that this process of transformation reflects man's qualities of immanence and transcendence, i.e., his ability to draw upon the past in order to make decisions in the present to structure his future according

to conscious purpose.

Anisa defines development as the translation of potentiality into actuality, a process which is sustained by interaction with the environment. The Model further defines and classifies potentialities within two broad categories--biological and psychological. Development thus refers to both physiological and psychological changes in an organism that raise it from its present state to a more complex and more highly integrated state of organization and functioning. It is "orderly, progressive, cumulative, continuous, irreversible, and rhythmic" (Jordan, 1976:275; Carney, 1976a:76).

Biological Potentialities

On the biological level this process is perhaps best exemplified by embryogenesis: "The history of a man for the nine months preceding his birth would, probably, be far more interesting, and contain events of greater moment, than all the three score and ten years that follow it" (Coleridge, cited in Montagu, 1952:222). The most fascinating of these "events of great moment," and one that occurs at a staggering speed, is the development of the brain:

> In the human infant, neuronal cell number is most probably fully defined before the end of intrauterine life. Thereafter, through the first nine months of postnatal life, cell replication is that of glial cells, a process which terminates by the end of the first year . . . the period for rapid growth . . . extends from mid-gestation through the first six through nine months of postnatal life. In man, the brain is adding weight at the rate of one to two mg/minute at birth and goes from 25 per cent of its adult weight at birth to 70 per cent of its adult weight at one year of age. After this age, growth continues more slowly until final size is achieved. Differentiation as well as growth occurs rapidly during the critical periods . . . [and there is] no doubt that the coincidence of

> malnutrition with rapid brain growth results in decreased brain size and in altered brain composition (Birch, 1972:777).

Thus it is incontrovertible that biological integrity is a necessary, though not sufficient, condition for the orderly release of psychological potentialities. Both forms of development--biological and psychological--are sustained by interaction with the environment, and they intimately interrelate. Learning is predicated upon the construction, maintenance, and energizing of intact body tissues, especially the brain. Any interference with the biological integrity, that is, with the health of a child, is likely to impair his ability to learn, and thereby to suppress his potential. It is therefore critical that parents and educators recognize the key role of biological integrity in child development, and particularly in relation to learning capacity.

Theories of development are "guides for understanding the perfectability of man as well as his vulnerability" (Bruner, 1972:23). Considering all of the developmental influences that affect man, those that occur during the very early years of life have the most profound effect (Raman, 1974:328-337). The Anisa Model therefore directs considerable attention to prospective parents, new parents, and very young children, as "the extraordinary dependence of the human young on adult care and caring provides both an unparalleled opportunity for mental and emotional development and a period of vulnerability to profound distortion by neglect" (Eisenberg, 1973:221).

Because of the crucial nature of these earliest years, our educational planning hopes to provide for at least the general requirements shared by all children. The biological aspect of this time is of immense

importance because learning depends in the first place upon the existence of a sound physical and neurological base. The brain of the child in the womb grows at an astonishing rate, one to two milligrams per minute to a weight of some 400 grams at birth. The brain then grows to more than 90% of its maximum size by the age of three or four years. Throughout this time, incredibly complex neural structures and functions evolve. The development, differentiation, integration, and maturation of these enzymatic and metabolic systems are fundamental to the child's future capability and intellectual performance. Malnutrition of any kind or degree can produce structural and functional disorders in the central nervous system that, depending upon the time of onset, severity, and duration, can profoundly affect its future capabilities (Coursin, 1972:177-202).

> Both animal experiments and human studies suggest that a critical period of brain growth may exist during which malnutrition, even in a mild form and even for a short time, may produce irreversible damage. This critical period appears to be before birth and during early postnatal life [emphasis mine] (Winick, 1969:667).

There is a considerable body of research documenting systematic relationships between nutritional inadequacy, neurologic maturation, and competence in learning (Birch, 1968:590). Recent advances in our understanding of the biomedical correlates of learning--genetic, neurological, metabolic, etc.--have revealed that biological integrity has far more direct and profound implications for learning than we formerly realized. A child whose body is not only free of disease but is also in perfect condition has a far better chance of becoming a competent learner and of releasing his biological and psychological potentialities than does a

child who is not enjoying maximum health and vitality.

Whitehead makes several comments about the implications that the above biological matters hold for educators:

> I lay it down as an educational axiom that in teaching you will come to grief as soon as you forget that your pupils have bodies . . . our most immediate environment is constituted by the various organs of our own bodies . . . the body is the organism whose states regulate our cognisance of the world (1967a:50; 1959:18; 1967b:91).

For educators, then, it is important to always keep in mind that the children we are teaching have bodies and brains whose biological integrity is of primary importance.

To inject a lighter note, one can understand how educators, whose purpose is to train children's minds, have traditionally overlooked the fact that those same children have physical brains, when one reflects on Whitehead's statement that it takes a very unusual mind to question the obvious. One of the most obvious and habitual matters of course in life is our bodies. As Whitehead says, "No one ever says, 'here am I, and I have brought my body with me.'" He further says that our bodily experience is the basis of existence and that for this very reason, "psychology and physiology are difficult to disassociate from each other, either for the purposes of abstract science or for the purposes of the medical practitioner. The behavior systems of the human body and of intimate experience are closely entangled" (1968:72, 114).

Definition of Health

The Anisa Model affirms the World Health Organization's positive definition of health as "a state of complete physical, mental and social

well-being and not merely the absence of disease or infirmity" (WHO, 1960:1). This positive and dynamic view of health goes far beyond mere survival; it refers to the quality of well-being, and thus supports the Whiteheadian (1971:8) view of evolution as aiming upward toward the perpetual improvement of the quality of human life:

> The art of life is first to be alive,
>
> secondly to be alive in a satisfactory way,
>
> and thirdly to acquire an increase in satisfaction.

The Anisa Model also affirms that one of the main purposes of human life is to serve mankind in a way that will advance civilization and perpetually improve the quality of life for everyone on the planet. This moral position has direct implications for health in its broadest sense, for the "physical, mental, and social well-being" of all people. It would, for example, support the premise that health is a fundamental human right rather than a privilege, and that all people, therefore, should have access to comprehensive health services, and even more essentially, to an environment supportive of good health, proper nutrition, and human growth.

As efforts to attain the above goals and to improve the quality of life are launched, the crucial role of educational science in this process is continually voiced, as demonstrated by the following quotes:

> To be effective, the methods and procedures used to achieve this aim must take account of the ways in which people develop various forms of behavior, . . . and of the ways in which people acquire and use knowledge (Gordon, 1965:15).

The World Health Organization is also concerned with a more positive and educative approach to health:

> Health will not improve greatly only by attacking disease. Food production does not improve only by destruction of weeds. Successful work for maternal and child health is based on teaching people what they can do for themselves. . . . This function of medicine--the positive and educational--has in the past been relatively neglected. There is need for great expansion and experiment in making healthy living acceptable and available to large masses of humanity. It would seem scarcely justifiable to undertake measures to ensure that more children will live, unless we make efforts at the same time to ensure that their life is worth living (WHO, 1949:260).

The need for educational expertise among health professionals is emphatically stressed by Dr. L.A. Kaprio, one of the directors of the World Health Organization:

> For the health education specialist, we need a person with mastery over a wide field, conversant with the biological, the exact and the social sciences, and of educational theory and practice applicable to the solution of health problems involved in health-related behavior of the people. Such a specialist needs to be aware of what is known in these fields which is relevant both to the medical aspects of the disease problems and their educational and behavior facets (1970:12).

It becomes increasingly apparent from the above discussion that in the pursuit of the attainment of the state of positive health, "complete physical, mental, and social wellbeing," not only are educational and medical efforts inseparable; of equal importance is a balanced emphasis on individual development and community development. Because an individual's health is profoundly influenced by the health of his family, community, and indeed of the entire surrounding society, we wish to supplement the World Health Organization's definition of health with the following broad definition of public health:

> Public health is the science and the art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis

> and preventive treatment of disease, and the development of the social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of health (Winslow, 1923:1).

An organismic view of human development would lead one to the conviction that a comprehensive educational program designed to improve the quality of wellbeing of children could not afford to ignore any of the above elements, however complex and far-reaching their implications. As was amply demonstrated in the previous chapter documenting children's health problems, a formidable amount of work remains to be done in this country (how much more in the countries of the developing world) in order to raise children's health status to meet minimal standards of functional health. Beyond meeting basic survival standards, which negatively focus on the absence of disease and infirmity, the Anisa Model would advocate the adoption and vigorous implementation of far higher health standards emphasizing the positive definition of health as articulated by the World Health Organization to be the state of "complete physical, mental, and social wellbeing" of all people.

Psychological Potentialities and the Process Curriculum*

Let us now turn our attention to psychological development. Once the biological prerequisites are met, psychological development, or the actualization of psychological potentialities, depends upon learning. The Anisa theory of development establishes five categories of psychological

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*The following discussions of the Anisa process and content curriculums (pp. 49-57), unless otherwise indicated, are largely based upon the following references: Jordan, 1976; Carney, 1976a; Streets and Jordan, 1973; and Jordan and Streets, 1973 .

potentialities: psychomotor, perceptual, cognitive, affective, and volitional. Our definition of learning--the ability to differentiate experience by breaking it down into contrastable elements, to integrate those elements into a new pattern, and to generalize the pattern to new situations--applies to the actualization of all psychological potentialities. The purpose of the Anisa process curriculum is to enable the child to learn how to learn, thereby placing him in charge of his destiny.

Every potentiality is a latent power which is actualized through a process. In brief, process refers to a patterned expression of energy utilization which depends upon some structure in the brain, the function of which produces the pattern. The five categories of psychological potentialities comprise the process curriculum of the Anisa Model. As such, they emphasize how to learn rather than what to learn. When a child knows how to learn, he is able to direct the actualization of his own potentialities, and hence to take charge of his own destiny. Learning is man's means of moving beyond himself, of transcending limitations, and of making what Whitehead calls "the creative advance into novelty." The Anisa Model defines learning competence--knowing how to learn--as the conscious ability to "differentiate aspects of experience, whether internal or external, integrate them into a new whole, and generalize the whole to different situations. Differentiation, integration, and generalization thus comprise the common denominator of all types of learning."*

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*For example, the act of riding a bicycle involves the differentiation of a variety of different movements of different muscles which have to be integrated into patterns of movements to enable one to propel the bicycle forward while maintaining balance. Many of these movements already exist in the repertoire of the person when he comes to the task of learning to ride the bicycle; his learning to ride requires identify-

When the potentialities are actualized, they are expressed in patterns of energy use--acting, perceiving, thinking, feeling, and intending. These five categories of psychological potentialities--psychomotor, perceptual, cognitive, affective, and volitional--are explained as follows.

Psychomotor competence refers to the ability to coordinate, control, and direct the movement and position of the voluntary muscles. It is

> . . . an inner awareness of all of the muscles (which can come under voluntary control to whatever degree), all of the differentiated movements of body parts they are capable of effecting, and the ability to execute an infinite variety of combinations (integrations) of such movements into patterns which express purposes of the organism (Blane, 1975:187).

As the child interacts with the environment, he gradually gains control of his muscles, and an internal organization called the motor-base emerges (Early, 1969:5). Essentially, the motor-base is a positional and functional awareness of all of the parts of the body and its use as a reference point in time and space. Examples of specific processes that underlie the development of psychomotor competence are balance, posture, locomotion, and manipulation. Their sub-processes include laterality, verticality, and directionality.

Perceptual competence refers to the ability to differentiate sensory information and to integrate that information into generalizable patterns which constitute interpretations of reality that enable one to

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ing (differentiating) which movements are required and integrating them into a new whole or pattern. The new pattern may then be generalized to riding different kinds of bicycles, riding a motorcycle, or a variety of similar activities.

make meaningful decisions and to act upon them. Past experience, present needs, and aspirations or intentions concerning the future strongly influence one's organization and interpretation of stimuli. It is through this process that one keeps in touch with reality and increases one's effectance. Just as a motor-base becomes structured as psychomotor competence develops, so a perceptual base develops as perceptual competence is gained. This perceptual base functions as a general set of rules which generate and direct the basic processes of differentiation, integration, and generalization as they relate to perception. Processes underlying such competence include the senses of vision, hearing, smell, taste, the cutaneous senses (touch, pressure, temperature, and pain) and the vestibular senses (which inform us of motion and enable us to maintain equilibrium). Both vision and hearing have been differentiated into a large number of processes and sub-processes, the mastery of which comprise the most important educational objectives of the perceptual area of the process curriculum. Examples of processes and sub-processes under visual perception are: duration, space, color (hue, saturation, brightness, and contrast). Processes subsuming auditory perception include figure/ground, pitch, duration, timbre, and sound localization.

Cognitive competence refers to the ability to think and to reason. Like all other potentialities, it develops through interaction with the environment and reflects close relationships with the other categories of potentialities. For example, thinking is often an extension of the interpretational aspects of perception, is frequently accompanied by muscular (psychomotor) and emotional reactions, and is usually guided by intentions or purposes. Piaget writes (1971:104), "Actually in order to

know objects, the subject must act upon them and therefore transform them: he must displace, connect, combine, take apart, and reassemble them." One can see the common denominators of learning--differentiation, integration, and generalization--in the above quotation. Through these interactions, internal structures develop in the brain which form the basis for cognitive competence. We have identified over forty processes and sub-processes that underlie the development of cognitive competence. A brief list of examples follows: analysis, synthesis, deduction, induction, interpolation, extrapolation, analogy, metaphor, classification, seriation, conservation, and number relations. By identifying and defining specific thinking processes, one is able to help children to learn "how to think" in addition to "what to think."

Affective competence is the conscious ability to differentiate emotional states which reflect varying degrees of viability, to integrate them appropriately so that they accurately inform the individual of his condition of viability, and to generalize the integration to anticipated experiences of oneself and of others. Affective competence involves the differentiation of emotions and feelings, their integration in reference to memories, objects, events, people, or ideals, and their generalization in ways that provide a basic stability in life. When one considers Whitehead's view (cited in Price, 1954:188) that ninety percent of our lives is governed by emotions; and that how we feel about things is for the most part learned but rarely "taught" in any deliberate or conscious way, one realizes how important it is that the organization of one's emotional life be so structured as to constantly increase the quality of life for oneself and for others. This is our definition of affec-

tive competence. The Anisa Model, then, by design, does not leave the healthy development of children's emotional lives up to chance. Rather, we have explored the nature and significance of affective competence and have identified a large number of processes that contribute to its development. Examples are identification, imitation, reciprocation, facilitation, and appraisal. (See Carney, 1976b, for further elaboration.) Affective competence may be summarized as the ability to organize one's emotions in a way that supports and facilitates the release of further potentiality for oneself and for others. Being in love with learning is one sign of positive emotional organization.

Volitional competence is the ability to form ultimate aims, to differentiate them into operable goals, and to integrate them into a perpetual flow of purposeful behavior directed toward the attainment of those goals. Whitehead places great emphasis on the role of purpose as a vital element in the translation of potentiality into actuality. Purpose guides and directs the process of becoming and provides criteria for making choices among a variety of possibilities. When one's purpose becomes conscious, one has clear intentions, and one's volitional capacity is activated. Some of the processes that relate to the development of volitional competence are attention, goal-setting, self-arousal, perseverance, effecting closure, and fantasizing a state of goal attainment. For example, goal setting is the process of planning one's future by formulating a vision of a future condition toward which one wishes to strive. Children can practice goal setting and thereby translate an abstract purpose into an ordered sequence of actions designed to accomplish the stated objective. By making decisions, investing time in them,

and following them through to the end, children learn the essential dynamics of translating one's hopes and aspirations into reality. By exercising these volitional capacities, children gradually learn to take charge of their own destinies. While a great deal of research remains to be done in the area of volition, the above processes provide a rich theoretical beginning that will enable educators to begin to address this crucial aspect of human functioning. (For further information, see Conway, 1975.)

Thus, after an intensive investigation of the wide range of skills, abilities, and talents displayed by human beings, the Anisa team formulated an overarching classification system to account for all of man's psychological potentialities. The five basic categories discussed above--psychomotor, perceptual, cognitive, affective, and volitional--represent modes of acting, perceiving, thinking, feeling, and intending that are common to all human functioning. We therefore call them universal processes.

Mastery of the central processes in each category constitutes learning competence in that area. Specifications on each of the basic processes and sub-processes in these five cateogries constitute the process curriculum. Each specification contains the following: a definition of the particular process; its theoretical and empirical justification supported by a review of the relevant research literature; an expression of the process in terms of educational objectives; an explanation of the kinds of learning experiences a child needs in order to achieve the objectives, and a statement on means of evaluating the experiences to assure that the child has attained the objectives.

Classification of Environments and the Content Curriculum

Learning, the translation of potentiality into actuality, never occurs in a vacuum. It is always sustained by interaction with an environment. The environment may be classified as follows: the physical environment--mineral, vegetable, animal; the human environment--all human beings; the unknown and unknowable environment--the ultimate mysteries of the cosmos; and the environment of the self--a reflection of the above environments in each person. Anisa's organization of the content curriculum may be briefly summarized as follows: for the physical environment--mathematics, sciences, and technology; for the human environment--social sciences, history, communications, and language; for the unknown environment--philosophy, religion, and aesthetics; for the environment of the self--all of the above as they relate to each person.

Because children develop through interaction with their total environment, the Anisa curriculum has an equal focus on process and content. There is a balance of concern between how a child learns and what a child learns. Teaching in that context is defined as arranging environments and guiding the child's interactions with them in order to accomplish educational goals specified by both the content and the process curriculums. Teaching competence or knowing how to teach is thereby defined as the conscious ability to arrange environments and to guide interactions with them in such a way that it makes it easy for children to learn how to learn (Carney, 1976a:102-103).

The explicit process curriculum, focusing on "how to learn," is thus balanced and complemented by a complete content curriculum that joins

the "hows" of learning with the information learned--the "whats" of learning. The content curriculum is also very carefully designed to equip children to successfully negotiate the challenges which they will face as adults in the twenty-first century. Although a full discussion of the process and content curriculums is beyond the scope of the present work, suffice it to say that we have raised critical questions and taken them into serious consideration in planning a curriculum capable of meeting the exigencies of modern life. An example of one such question follows: "Since the information explosion is upon us and there is no way to teach anything but the tiniest fraction of man's accumulated knowledge, what criteria should be used in determining what should make up that tiniest fraction?" (Jordan, 1976:274). Thus the Anisa Model is deeply concerned with meeting the real needs of the present and the future.

The Biological Underpinnings of the Five Categories of Psychological Potentialities

The following section discusses the relationship of the above five psychological potentialities with their prerequisite biological potentialities. If the learning process is to progress at an optimum rate, upholding the biological integrity of all students and staff must be a primary concern of every educational institution, especially ones dealing with young children.

Psychomotor. The biological integrity of a child has direct implications for his psychomotor development, which in turn has direct effects upon his educational progress. Because development is sustained through interaction with the environment, and the primary means of con-

ducting such interaction is through the patterned movements of the muscles, the development of psychomotor competence is given a position of primary importance in the Anisa Model. Its significance to education, and particularly to the education of young children is evidenced below:

> To explore and learn about his environment, the child must move about in his environment, and this movement must be for the purpose of contacting and interacting with the environment . . . the more extensive the exploration demanded, the more comprehensive must be the possibilities of movement. The more intensive the exploration, the more precise must be the movements (Kephart, 1971:97).

Psychomotor development relates very closely to the other four categories of potentiality: the perceptual base is built upon the motor base. Concepts, in large part, are built up from precepts. Affect, especially a child's feelings about himself, is greatly influenced by how he feels about his body's appearance, its movements and capabilities (Secord and Jouard, 1953). Because of the purposive nature of most movements, volition, too, is involved. In fact, <u>action</u> of any kind has psychomotor elements. Even speech, reading, and writing depend upon muscular coordination (Blane, 1975:192). Thus, any interference with gross or fine motor movements is likely to have negative repercussions on the child's overall educational progress.

What kinds of conditions do American children have that might impair psychomotor development?

An estimated 14 million children suffer chronic conditions that often involve considerable limitation of activity (Harvey, 1975:26). Two million of these children have orthopedic handicaps (White House Conference, 1970:157), and over 1.5 million have asthma (Harvey, 1975:26). Obesity is not classified with the above chronic conditions but perhaps

it ought to be as it affects an additional 14 million or 20% of children (Mayer, 1975:199).

Accidents are also a prime cause of physical disability among children; each year about 19 million children are injured severely enough to seek medical care or to restrict their usual activity temporarily (Profiles of Children, 1970:28). As many as 50% of serious accidents involve motor vehicles, and large numbers of children suffer permanent disabilities from such incidents.

It is clear from the above that a wide variety of conditions contribute to psychomotor difficulties and that efforts to resolve the problems must reflect a similar diversity of approaches. For example, obesity is one very common condition that undermines psychomotor competence. Its prevention would call for considerable changes in life styles. Presently, over 50% of adult men and over 40% of adult women are overweight (U.S. Public Health Service statistics, cited in Mayer, 1975:199). Increasingly, it appears that much childhood obesity is induced by overfeeding babies. To compound the problem, preschool children watch TV an average of five hours a day and see about 5000 "junk food" commercials per year. Studies of children's schedules show that most of this sedentary viewing time has replaced active, out-of-doors, playing time. "This drastic curtailment of physical activity has been both so gradual and so nearly universal that most parents seem unaware of it. But it shows up in the lack of fitness and the overweight of too many children" (Mayer, 1975:199-200).

Clearly, changes in parental attitudes, cultural life styles and major industries (food, advertising, and media) will be necessary to

alter obesity rates. The same complex of forces applies to reducing accident rates. Three random examples of culturally-related hazards that cause significant numbers of childhood accidents are: there are two firearms (guns) for every family; 40% of women usually carry medicine in their purses (young children love to explore purses); and there are over 75,000 minibike accidents each year (Feinbloom, 1975:112, 126, 133). Again, any reduction in accident rates will no doubt require a complex, multifactoral approach, including an analysis of societal priorities.

In reference to orthopedic and other chronic handicaps, two possible approaches, through home and school, are offered below.

Parent education could include close medical supervision during the time of pre-conception, prenatal, and postnatal development. Of special importance are correct nutrition and avoidance of drugs, alcohol, tobacco, etc.; protection of the fetus from unnecessary medications and all potential teratogenic agents. Primary prevention is prenatal care, especially nutrition and genetic counseling. Secondary prevention should begin immediately after birth and certainly within the first two years. An accurate and complete recording of all pre-, peri-, and postnatal events is of great assistance in determining the origin of orthopedic problems. The proposed support system would pick up problems very early whereas the present system misses a large percentage of them due to its fragmentation.

Once problems are identified, one effective preventive approach is to enlist the support and help of the parents by very early intervention during the child's infancy and by training the parents to assist in

the child's treatment and overall development. Parents and other family members need to understand the condition and need to know how to help the child by arranging an appropriate environment. For example, conditions such as asthma and hay fever can often be greatly improved by a home completely free of allergens (dust, feathers, animal hair) and by competent affective management. Again, attention should focus on the first years of life, from pre-conception to age five, for prevention and the greatest possible amelioration. When the child reaches school age, the teachers also need to be fully informed of the ways to handle chronic conditions (biological and psychological). In this way, a supportive and competent adult environment would surround the child throughout his development, minimizing the problems likely to arise due to chronic conditions.

At school, children ages six to eleven currently receive treatment in only 44% of the cases (U.S. Health, 1975:389). Training regular classroom teachers and parents to render treatment (at least daily supervision of prescribed routine, exercises, etc.) could help to improve this situation. Teachers could also be trained to identify and refer problems to medical personnel. In school, other children can serve as an excellent resource to work with handicapped children; this also helps them to learn to exercise moral and affective competence toward handicapped individuals.

Time and again one sees the crucial role of parents, and the need for a support system for them, in all efforts to improve children's health. In the case of physically handicapped children, secondary emotional and social complications are very likely to arise if preventive intervention does not address both the parents' and the child's special needs:

> Many parents, overwhelmed by the impact of an imperfect infant, are unable to spontaneously love their child. If their dilemma is unresolved and takes the form of overt rejection, understimulation, overprotection, or overexpectation, the child's growth and development can only suffer (Lis and Ruess, 1973:974).

Because such secondary handicaps should be avoidable, the White House Conference on Children (1970:159) called for preventive intervention. Their rationale was based on the following observations:

> Parents of handicapped children often feel markedly inadequate.
>
> Parental depression, anxiety, and other factors frequently distort child-rearing practices.
>
> Lack of communication within the family is striking.
>
> The family may become socially isolated.
>
> The family may postpone or avoid seeking help.
>
> The family's finances may be severely strained.

In light of the above discussion, we would advocate the development of comprehensive multidisciplinary support systems to assist children, parents, and teachers to alleviate handicaps that already exist; along with intensified research into the causes of orthopedic difficulties in the hope of finding a means of effecting true primary prevention. A great deal has been done for handicapped children on the private and public level and yet, as is obvious from the above, much work remains to be done.

Psychomotor development cannot proceed normally until its biological prerequisites are met. From the above discussion, one can see that some 20 to 40% of children are apt to manifest various degrees of psychomotor limitations that will affect their learning capacities. Some limitations may be temporary, as in the case of minor accidents,

but many impairments are permanent and must be given direct and persistent attention by educators throughout the child's life. A statistic that speaks to the avoidable nature of many psychomotor disabilities is that only 60% of all children under 15 and less than 50% of minority children under five are protected against polio (U.S. Health, 1975:278). Raising immunization levels to 100% would clearly avoid some unnecessary risks.

Perception. Now let us turn our attention to perception and the biological requirements underlying perceptual competence. If the brain is to learn, it must derive information from the external environment by means of intact perceptual systems. The major sensory modalities are comprised of those associated with sight, hearing, smell, taste, the cutaneous senses, and the vestibular senses. In addition to having these several individual input systems in working order, it is important that intersensory organization unite and interrelate the stimuli perceived by the separate and independent sense systems. The proper development of these complex perceptual channels has direct implications for education, as the following example demonstrates. Astute teachers realize that the phenomenal world of the young child is constructed of well-separated bodies of information deriving from the various sensory modalities. They recognize that information received by young children through one avenue of sense perception is not directly transduced to other sensory modalities (Birch and Lefford, 1963:43). Therefore, a competent teacher will have the children employ as many senses as possible, thereby enriching their educational interaction with the environment. For example, if a class of young children is studying apples, each child might hold an apple and tell how it feels: is it hard or soft, wet or

dry, rough or smooth? They might explore the apples using each of the sense modalities: how does an apple look, sound, smell, and taste? Their sensory differentiation and integration may be further strengthened by closing off certain modalities and by introducing various new fruits. For example, the teacher might ask the children to close their eyes and to feel an apple and a pear. Or she might see if they could taste the difference between an apple and a pear with their eyes closed and while they are holding their noses. Or she could have them identify three different fruits by smell alone. These simple perceptual exercises will eventually increase the children's capacities to deal in integrated ways with multi-modal information.

The above educational example illustrates the potential richness of a child's perceptual experience, and further suggests the wide ramifications of perception's educational implications. The highly refined perceptual abilities and aesthetic sensibilities of great artists and musicians evolve from such simple introductory perceptual experiences. However, the development of perceptual competence, regardless of the degree of its simplicity or complexity, depends from the very outset upon a sound physiological base. "A great deal of pedagogic effort is unintentionally thrown away in an attempt to teach pupils whose undiscovered handicaps, often of a mild nature in themselves, prevent the child from learning or interfere with the learning process" (Eames, 1973:214).

Such physiological disorders affect significant numbers of American children, as seen from the discussion in Chapter I: 10 to 20% have visual problems, 5 to 10% have speech problems, and at least 5% have hearing problems. The distribution of resources to meet the above needs is

grossly inadequate. In spite of widespread need, special resources to deal with these problems are available in less than half the cases. For children ages six to eleven, the availability and use of services is as follows: sight-saving, 35%; speech therapy, 47%; and hearing correction, 34% (U.S. Health, 1975:389). Thus, millions of American children have uncorrected perceptual disorders that undoubtedly interfere with their ability to learn and thereby suppress the release of their psychological potentiality. Children under the age of six are especially liable to have undiscovered perceptual disorders because there is currently no systematic method of universally screening preschool children. Because biological integrity is a prerequisite of utmost importance to the development of learning competence, and because such critical learning takes place in the child's earliest years, the Anisa Model proposes to emphasize early and primary prevention for all children. A brief list of examples of early intervention measures to avert vision, hearing, and speech impairments follows.

To insure properly functioning vision, each child should have a professional eye examination in infancy accompanied by a clinical family history that includes questions as to whether there were any of the following problems: (1) a family history of visual defects--refractive errors, strabismus, defective color vision, glaucoma and diabetes, etc.; (2) a history during the mother's pregnancy of rubella, venereal disease, toxemia, or any other difficulties; (3) a birth history of prolonged or difficult labor, low birth weight, or prematurity (there is a high degree of myopia prevalent among children who were born prematurely); (4) neonatal complications such as respiratory difficulty requiring prolonged

oxygen therapy; and (5) any evidence of mental retardation, deafness, or cerebral palsy in the child or in the family. This initial examination and parental interview should be followed by professional eye examinations every two years and paraprofessional screening in the alternate years (Lin-fu, 1971:1-6; Rosenthal, 1975:266). An example of the new technology available in this field is that there is an automatic refractor machine that can measure the optical error of one's eyes in two-and-a-half seconds. Paraprofessionals can use this machine and it pays off well in a cost benefit analysis. It is especially useful with children because they do not have to sit still very long (Meyer, 1976:16).

Although the procedures recommended above may sound excessively thorough to some readers, such careful early intervention is crucial because eye conditions are often correctable in the very early years but not thereafter.

Parents a d teachers must be trained to recognize signs indicative of visual problems, for example, if a child holds books unusually close to or far from the eyes while reading; frequently blinks, squints, or rubs eyes; complains of headaches, dizziness, or sensitivity to light; has difficulty in games requiring distance vision or visual accuracy, etc. When a parent or teacher suspects visual problems, they should have ready access to appropriate help (Lin-fu, 1971:6).

Arranging environments for vision is also an important skill for both parents and teachers. Considerations include lighting, the time spent reading or watching television, blackboard or TV distances, fatigue, and sunshine. Nutrition, rest, and exercise are also important factors in maintaining the health of one's eyes.

A child who is likely to develop hearing and speech problems may, in many cases, be identified soon after birth by means of at least twenty-five criteria (Altman, 1975:8) including a family history of hearing loss or of nervous system diseases, specific complications of pregnancy or delivery, maternal diseases or drug intake, low Apgar scores of the newborn, low birth weight, malformations, or other birth complications. Within the first few months and thereafter the child's hearing may be diagnosed through direct hearing tests (Altman, 1975:8-12).

Regular screening can identify problems that may develop later as a result of accidents, childhood diseases like scarlet fever or mumps, chronic allergic reactions, or repeated ear infections. Therefore, biannually, a doctor or paraprofessional should see if the child is hearing correctly and speaking on its age-appropriate developmental level.

Parent training might emphasize creating a rich linguistic environment and understanding the critical periods for speech. Parents could be encouraged to stimulate speech and to recognize problems, as initial recognition of problems at school age is rather late. Should there be problems, the speech therapist could train parents to carry out the prescription at home through a home-based program with a developmental curriculum. Home, school, and community cooperation should provide support for parents and children combining medical and educational expertise. The importance of parent involvement in assuring that the child is hearing correctly and is developing speech properly can hardly be overemphasized:

> By three years of age, experts estimate that most children understand most of the language that they will use for the rest of their lives in ordinary conversation . . . over and above lan-

> guage's fundamental role in the development of intelligence, it plays an extremely important part in the development of social skills. So much of what transpires between any two people involves either listening to or expressing language. And so, in a very significant way, good language development underlies good social development (White, 1975:111).

Thus, early intervention in correcting perceptual problems may serve to prevent a wide variety of learning disabilities and personality disorders and to promote both biological and psychological development.

Cognition. The biological integrity of the central nervous system is literally the foundation upon which education depends. Because the brain's most rapid period of growth extends from conception through the first years of life, we shall focus our attention on this time. During periods of rapid growth, there are certain times of special vulnerability in the development of organisms during which the presence or the lack of a developmental modifier causes a significant alteration in the course of normal development. The general term for these periods is "sensitive periods." However, if the presence or lack of certain modifiers during a sensitive period results in permanent damage or change, it it called a "critical period." The more rapid the growth, the more vulnerable the organism is to deprivation (Raman, 1974:332). The time from conception through the first year of life is particularly crucial in this respect. If the mother is in poor health, poor nutritional status, and has inadequate pre- and postnatal care, the child is quite apt to suffer various degrees of brain damage. In Chapter I, in the section entitled "Birth and Brain," many factors which might contribute to problems of the central nervous system were discussed: teratological factors such as drugs, alcohol, cigarettes, and occupational toxins affecting the fetus;

a wide range of diseases, from genetic diseases to venereal diseases and rubella; accidents; complications during delivery and the first few days of life; and finally, prematurity, low birth weight, and birth anomalies. Increasingly, maternal, fetal, and perinatal factors are being investigated as the original causes of central nervous system disorders.

Many investigations and clinical evaluations have indicated that disturbed psychomotor and perceptual functioning frequently accompany central nervous system damage (Birch and Lefford, 1964:46). One study compared 200 boys with reading disorders to 200 boys without reading disorders. Of those with reading disorders, 16.6% had been exposed to two or more maternal complications of pregnancy or delivery as compared to 1.5% of those boys without reading disorders. The maternal complications most highly associated with reading disorders in the boys were those most apt to lead to fetal anoxia: preeclampsia, hypertensive disease, and bleeding during pregnancy. The investigators hypothesize that the prevention of these pregnancy and delivery complications might greatly reduce the numbers of children with reading disorders and related functional nervous system disabilities (Kawi and Pasamanick, 1973:205). Further studies into the cortical base of reading disabilities noted that abnormal EEG's (electroencephalograms) appeared in high concentration in children with disabilities in reading--71%--and also in children with disorders in behavior--72% (Kennard, 1952:330-333). A high percentage of abnormal EEG's has also been noted among people with speech disorders (Lindsley, 1940:211-225). Thus, it is becoming fairly evident that functional or structural disorders in the central nervous system may be the underlying causes of a considerable percentage of learning disabilities.

As can be expected from the above discussion, critical periods have both physiological and psychological elements. Experiments with animals have demonstrated that an early environment rich and diversified in stimuli affects neural and behavioral development, as measured by exploratory activity, learning ability, and even by chemical and enzymatic properties of the brain (Dubos, 1969:489-490). Although sensitive periods in a psychological sense have not been as thoroughly investigated as physiological sensitive periods, this is an area of increasing concern to educators:

> In children . . . onset of specific learning abilities is undoubtedly closely related to maturation of the nervous system, sense organs and effectors . . . observations . . . suggest that . . . there do exist specific brain mechanisms ready to be activated during and only during a particular period of the life span of the child, and that if they are not properly activated at the right time, subsequent activation is difficult or impossible, resulting in permanent disabilities in later life (Thorpe and Zangwill, 1961:199-200).

Incidentally, two other forms of sensitive periods that are assuming increasing importance for educators are those associated with growth spurts, such as during adolescence, and those identified with biological rhythms. For example, a serious consideration of circadian rhythms would have direct implications for scheduling academic tasks throughout the day. Educational systems might also consider monthly, seasonal, and annual cycles in planning long-term schedules for their students.

An emerging science with profound implications for education is behavioral teratology. Its hypothesis is that behavior is at least as susceptible to teratogenic influence as are other developing structural systems. Unlike the overt congenital defects and gross functional impair-

ments of conventional teratology that are evident at birth, behavioral disorders and subtle functional abnormalities are not readily identifiable and may not be revealed until later in life. Thus, a teratogen may alter the development of a particular fetal brain center, and yet the morphological or biochemical changes may not manifest themselves until the individual is much older, and then only in the form of behavioral dysfunctions. When events are that distant in time and in space, it is very difficult to detect exact cause and effect relationships. However, long term studies on animals are beginning to answer some basic research questions as to whether there are subtle and long-range effects from prenatal exposure to neurotoxic substances. Spyker and colleagues (1974) carried out a series of long term developmental, behavioral, biochemical, and morphological studies on mice from mothers exposed to low levels of methylmercury at different stages of gestation. (All forms of mercury, which is widely used in industry, are capable of converting naturally to methylmercury, a toxic substance that readily crosses blood-brain and placental "barriers.") Healthy, pregnant mice were exposed to the chemical. After the young were born, 372 apparently healthy offspring that appeared normal were selected for the long-term study and were closely evaluated throughout their three year life spans. In the absence of any overt signs, offspring of treated mothers responded differently from controls when tested for subtle behavioral deviations at various stages throughout development. They became progressively worse with time, showing neuromuscular and learning deficits, immuno-deficiencies, neurological disorders, infections, postural problems, generalized debilitation, and early aging. The authors concluded (1974:476) that: "Evidence from this research suggests that

evaluation of subtle and long-term consequences of prenatal exposure is essential for a thorough assessment of the impact of occupational hazards on human health."

The reason for the lengthy concern with this topic in a section on the biological substrates of cognitive competence is that the central nervous system mediates learning. If it suffers any impairment, particularly during its earliest phases of development, the cognitive growth of the child is gravely jeopardized. The search for the primary causes of learning disabilities leads increasingly to circumstances surrounding the child's life from conception on, emphasizing the first months and years. Thus maternal health assumes a position of primary importance. In 1963, approximately 30% of women who delivered live babies in wedlock were employed during pregnancy (A.P.H.A., 1975:86). An estimated five million women hold hazardous jobs and an estimated one million fetuses accompany their mothers into the workplace daily (Burnham, 1976:42). The vulnerability of the developing organism in utero to numerous drugs, industrial wastes, radiation, and various chemicals commonly found in urban industrial environments is well known (Spyker, 1974:471). The recognized effects of exposure to such noxious agents are congenital malformations and severe functional deficits. However, new questions are being raised concerning behavioral teratology--i.e., whether very small doses of the above agents produce subclinical yet significant damage that does not emerge for years. If this thesis is true, it has implications for all sectors of society. It does not merely apply to working women, as the proliferation of new chemicals--an estimated one every twenty minutes--affects everyone, as does pollution. These broader concerns

bring one to question national priorities and the quality of life: the diseases that are killing Americans are generally insidious in onset with long incubation periods, and they are usually irreversible when they emerge clinically. When will priorities be reorganized in recognition of the necessity for primary prevention as the only meaningful way to deal with these diseases? Anyone seriously concerned with improving the health of the general population is forced to confront these broader issues and to keep them ever in mind (Carnow, 1975:503).

In like manner, action to improve the biological integrity of children's brains must needs cover a wide range of concerns and focus on prevention. Brief examples follow. Universal prenatal care must be a primary goal. At present only 70% of all pregnant women and 40% of unmarried ones receive such care before the end of the first trimester (U.S. Health, 1975:364). Careful monitoring of nutrition and avoidance of potentially teratogenic agents during pregnancy, followed by optimum nutrition throughout early childhood are also essential measures to ensure biological wellbeing. Accident prevention and bringing immunization levels up to 100% are also important. There is evident need for a comprehensive support system for parents and young children. Designed to meet medical and educational needs as they arise, such a system could render a wide variety of services centering on primary prevention, early education, and health promotion.

Affect. The internal states of a child, his energy levels and moods, are significantly affected by his health. Biological integrity is an important determinant of a child's behavior, the quality of his performance, and his ability to learn. Health of all body systems plays

a key role in safeguarding psychological welfare, as demonstrated in the following quote from Biology of Emotions:

> In emotional states, the individual is moved to take cognizance, evaluate and respond to some event, circumstance, or condition, real or imagined. Often this is a form of welfare response in which all systems of man take part. The cerebrospinal and striated neuromusculature systems show active pattern insofar as there occurs perception, intellectual evaluation [cognition] and motor response [psychomotor]; in short, there is purposeful effort [volition]. The vegetative nervous system, endocrine system and visceral systems, including smooth and cardiac neuromusculature, show coordinated responses intricately interwoven among each other . . . (Jacobson, 1967:125).

How one feels is greatly influenced by the underlying quality of one's physical health:

> . . . feelings and emotions are organic patterns of interacting activities which simultaneously involve many different kinds of processes: . . . physical, chemical, neurological, endocrinological, visceral, sensory, muscular, conscious, unconscious, etc.; and the causal factors operate in both directions between each activity and practically all of the other activities involved in the total organic pattern (Cason, 1933:283).

Not only does health exert an impact on people's emotional states, then, the process works both ways. Children who organize their emotions against themselves by failing to enjoy the pursuits necessary to their survival and by being emotionally attracted and committed to things which undermine their health and growth are programmed for trouble. For example, some adults may find it "cute" that a small child "loves" such junk foods as Fruit Loops, MacDonald's, Twinkies, and Ring Dings; and "hates" spinach; but that type of diet cannot but create problems on numerous dimensions that are likely to persist throughout the child's life. Because the foundation of a child's health habits and his very attitude to health are largely established in the preschool years, parents need to be extremely mindful of their modeling whatever emotional value they invest in

a healthy life style.

The extent of emotional and mental health problems among American children is over 10% and on the increase. In poverty populations, an estimated 50% of children have general health problems and 30% have mental health problems (Berlin, 1975:11). Although the causes of emotional disorders are very often complex and multifactoral, attention is increasingly being focused on the biological factors underlying emotional illness to see if the physiological condition of the person is a contributing factor to the disorder. Examples of possible sources of difficulty--i.e., biological impairments that might produce affective disorders--follow (Adler, 1975:112):

1. Prenatal-infections: viral (rubella), bacterial (syphilis), or protozoan (toxoplasmosis); toxins (drugs, alcohol, lead); and nutritional inadequacies or imbalances;

2. Postnatal--trauma, anoxia, accidents, infections (meningitis and encephalitis);

3. Neurological damage or dysfunction;

4. Metabolic disorders--inborn errors of metabolism, diabetes, hypoglycemia, food allergies, etc.;

5. Immunological, hormonal, or chromosomal disorders; and

6. Nutritional imbalances or insults throughout life.

Nutrition plays a major role in emotional health and is proving to be one effective form of therapy for a wide range of emotional disorders. A considerable body of research demonstrates that clinical improvement in certain types of severely disordered children and adults can be achieved by megavitamin therapy--the use of massive doses of certain vitamins--particularly (B3) niacin or niacinamide, (C) ascorbic acid, (B6) pyridoxine, and (B5) pantothenic acid (Rimland, 1973). Non-

verbal autistic and schizophrenic children have been noted to manifest significant and dramatic increases in verbal output when given vitamin therapy (Hawkins and Pauling, 1973). Many children with less severe behavioral problems respond to various kinds of dietary therapy. If they are hypoglycemic, a diet high in protein and low in sugar and carbohydrates is helpful (Powers, 1974); if they are hyperactive, the complete elimination of foods containing additives and salicylates may correct the problem (Feingold, 1974). Obviously, there is wide diversity in the etiology and treatment of nutritionally-based emotional disorders. The individual's biochemical profile and medical history must be carefully assessed, as in the prescription of any other medical intervention.

Not all emotional disorders stem from purely biological causes; no doubt psychological and environmental variables are often of major causative importance. However, in searching for the root causes of such problems, biological integrity is an oft neglected element that might well be investigated first, particularly in the case of children.

Affective issues require a multidisciplinary team approach to investigate biological and psychological causes, and they must be studied in light of the ecology of the entire family (rather than simply the individual child) in order to address the root of the problem in a family setting. Were the problem addressed by the school alone, that solitary approach by itself would be inadequate. Mental health services to reach parents and children at home well before the school years may be helpful, as mental health problems can often be recognized at a very early age, and if they are to be corrected, the parents will most certainly need to be involved. The comprehensive family life program would be capable of ad-

dressing the roots of emotional and social problems and could help families to transform themselves into productive, positive, and happy units, rather than to transmit current pathologies. Therefore it would function both as rehabilitation and prevention. The importance of very early intervention and of a comprehensive and understanding approach can hardly be overemphasized.

Volition. Some of the major signs of superb health are liveliness, vitality, stamina, and endurance; conversely, signs indicative of probable biological impairments are apathy, listlessness, loss of interest in daily activities, fatigue, and exhaustion. Maintaining the biological integrity of children ensures that they will have the energy and physical wellbeing essential to pursue the release of their psychological potentialities at an optimum rate. Interaction with the environment--whether in the form of moving, perceiving, thinking, feeling, or intending--requires energy. Thus optimum learning is most likely to take place when a child is in good health, is properly nourished, and is full of energy. When this is not the case, one of the first potentialities to be suppressed is volitional competence because attention, goal-setting, and indeed all aspects of motivation are dependent upon ample supplies of energy. When a child is sick or malnourished, his limited energy must be channeled to the maintenance of bodily functions, thus little learning can take place. He is not interested in setting goals or pursuing academic tasks. Unresponsiveness characterizes his relationships with all aspects of the surrounding environment--people as well as books, toys, and other educational materials. If this disinterest and lack of motivation persist, profound deleterious effects on the child's personal relationships and

on all aspects of his development are produced. In fact, one of the first clinical signs of improvement in children who have suffered malnutrition is that they show a greater interest in their surroundings and seek to communicate and interact more with the people around them. Whereas apathy inhibits volitional competence because the child can do very little as a result of his own will or intention, the vitality granted by good health supports the processes of attention, goal setting, and perseverance and thus promotes the development of volitional competence.

Mild biological impairments can also significantly undermine a child's volition. If a child is tired due to lack of rest or even to a long bus ride to school in the morning, he will be less able to pay attention than a child who is fresh and alert. Nutrition is of supreme importance as an improper diet can cause a wide variety of attentional and learning disorders. Dietary examples are: lack of breakfast, insufficient protein, excess sugar, and artificial additives. A child may even eat proper meals and yet metablize them so quickly that he requires frequent protein snacks, without which he becomes drowsy and inattentive. Obvious pedagogical implications may be derived from the above. In addition, the classroom must be so arranged as to facilitate attention. Visual and auditory shelters, appropriate lighting, low noise levels, postural options and a diverse range of manipulative materials will help children to select and attend to educational activities. The biological individuality of children must be closely attended to in arranging the most productive educational environments for them. For example, some children have extremely low thresholds for perceptual stimulus and are easily distracted and upset. Such children benefit from a very structured,

quiet, consistent, orderly environment with clearly defined step-by-step tasks. They may also profit from dietary changes and more rest.

The pervasive importance of biological integrity to the development of learning competence in all dimensions emerges time and again as one investigates various means of promoting children's wellbeing. Surely, it is inseparable from educational planning.

C. Proposal of a New Approach to Child Health

In contrast to the fact that the federal government pours more than fifty times as much money into "after-the-fact" rehabilitative or curative projects than into preventive ones (Wallace, 1974:26), the Anisa Model directs its primary health efforts to prospective parents, all parents--especially those of infants and young children, all children, youth, and teachers. Because biological integrity is a necessary precondition to the development of learning competence, and because such a large percentage of children suffer biological impairments that interfere with the release of their psychological potentialities, we strongly advocate the formation and implementation of new health standards that would insure all children optimum physiological functioning. Such standards would reflect the conviction that children require <u>outstanding</u> health and nutrition as a foundation for educational progress in all areas: psychomotor, perceptual, cognitive, affective, and volitional.

The preceding consideration of the biological underpinnings of the five categories of psychological potentialities suggested a variety of ways to address current unmet needs in child health. In brief, the Anisa Model's perspective is that parents and teachers must be intimately

involved, through home and school programs, in raising children's health status not merely to tolerable levels of wellbeing but to superior standards of truly excellent physical and psychological health. (Incidentally, this position implies that parents and teachers ought to be exceptionally healthy, too.) Chapters III and IV concern home and school programs that are designed to prevent most common health problems and to create and promote far more positive states of "physical, mental, and social wellbeing" among children, families, schools, and communities.

For instance, we feel that there is a great need for institutional support for parents and young children and that they represent the best investment in terms of preventive health services. This view is supported by prominent experts in child health, nutrition, and development (Herbert G. Birch, 1970; Helen M. Wallace, 1973; C. Arden Miller, 1975; Burton L. White, 1975) who have called attention to the need to support families in their efforts to maintain good health and have asserted that the key to preventing the vast majority of health problems is strong, well-informed families (Miller, 1975:356).

The 1970 White House Conference on Children repeatedly stressed the same concerns:

> How to become and function as parents is one of the most important health education problems we face today (p. 187).
>
> Health education services are markedly inadequate for children, for parents, and for the great number of persons who provide services for children. Arrangements for answering parents' questions or for routing them to available resources are too limited (p. 163).
>
> Parents and parents-to-be should be the primary target for all efforts to impart information on health-preserving practices and on those attitudes and experiences within the family which are most likely to promote normal intellectual and emotional development (pp. 202-203).

Therefore, as the trend towards comprehensive care evolves in this country, we firmly support the priority of putting parents and children first because the most critical period of development in terms of health--biological integrity--extends from the year prior to conception through the first few years of life. Anyone concerned with the health of children must consider the atmosphere of the family's interaction in the home, as the parents are the main guardians and indeed in many ways even the major determinants of the children's health. Thus, the family represents the first health delivery system as well as the first educational system. For example, one of the major responsibilities of parents is to attend to the physical wellbeing of the family. To fulfill this function, parents must have access to accurate and applicable health and nutrition information. Parents also need to know how to teach their children correct habits which will form the basis of their health practices for the rest of their lives.

Clearly, it is of crucial importance that the people responsible for shaping children's lives--primarily their parents and later their teachers--have the benefit of the most recent and accurate health knowledge and have access to the finest health services.

The following chapter outlines the essential features of a parent and family life program designed to enhance the biological and psychological development of all children and their families.

CHAPTER THREE

THE PARENT AND FAMILY LIFE PROGRAM

A. The Need for, Purpose, and Scope of the Parent and Family Life Program

The aim of the following discussion is to touch upon the major elements inherent in a comprehensive approach to parent and family life education, with particular emphasis on the health and very early education of the children.

In today's society, the institution of the family is in desperate need of help, as evidenced by rising rates of divorce, illegitimacy, child abuse and neglect, and innumerable other quantitative and qualitative indicators of family breakdown and social pathology. Urie Bronfenbrenner (1974:53) discusses the trouble that arises when the family unit, "the major context in which a person grows up," suffers profound alteration, as is happening today:

> The direction of change is one of disorganization rather than constructive development . . . this disorganization . . . is rapidly reflected in the structure and function of human beings, particularly those who are still in the process of development: children and young people.

The Anisa Model takes a philosophical position that runs counter to the current trends of family disorganization, namely, that marriage and the family are essential institutions, crucial to the viability and advancement of civilization, and especially necessary to the nurturing and raising of healthy children. In recognition of the central role of

the family in the overall development of children, the Anisa Model views parents as the primary educators and recognizes that parents, more than anyone else, need to know all that is known about how children grow and develop.

The importance of the earliest years of a child's life to his total development has been solidly documented: Anshen, 1949; Brazelton, 1969 and 1974; Gordon, 1970; Jordan, 1973; Parker, 1972; Pickarts and Fargo, 1971; Piaget, 1952; Weikart, 1971; and White, 1975. There is little question that

> The informal education that families provide for their children makes more of an impact on a child's total educational development than the formal educational system (White, 1975:4).

In light of the above it is thought provoking to realize that

> In the history of Western education there has never been a society that recognized the educational importance of the earliest years, or sponsored any systematic preparation and assistance to families or any other institution in guiding the early formation of children (White, 1975:130).

Indeed, up to now, little has been done to educate couples for the responsibility of parenting young chilren:

> There is one role in life the overwhelming majority of children will ultimately play but for which they are given virtually no concrete preparation. It is parenthood (Bronfenbrenner, 1974:61).

And again,

> Typical young parents are quite unprepared for the responsibility of educating their first baby. . . . By and large . . . the typical young family--and particularly the mother--has to go it alone (White, 1975:113-118).

This problem is also acute in the case of fathers; less than two percent of the total secondary school male population receives any training in the care and guidance of children (Kruger, 1973:6). One can

therefore understand why:

> The educational goals of the [early years] are by no means assured. It is not at all inevitable that [a child] will have his curiosity deepened and broadened anywhere near as well as he might. It is not at all inevitable that his social development will take place in a solid and fruitful manner. And it is not at all inevitable that the substructure for intelligence will be built well . . . not more than two thirds of our children currently get adequate development in the areas dealt with here, and no more than ten percent of our children do as well as they could during the first three years of their lives. This state of affairs [is] a tragedy (White, 1975:113, 130).

To fulfill the function of teaching parents how children develop and release their biological and psychological potentialities, we envision a comprehensive program staffed by a specially trained multidisciplinary team composed of medical and educational professionals who are explicitly prepared to meet the many varied needs of growing families. The ultimate long-range goal of such a program is to provide systematic institutional support for the family unit by developing a community-based structure (whether through a school system, hospital, health maintenance organization, or all three) that would deliver both health services and early childhood educational knowledge directly to parents, thereby facilitating the release of the collective potentialities of the family for the benefit of the community at large.

As parents are the first educators and are also largely responsible for their children's health, and as biological integrity is a fundamental prerequisite for proper intellectual growth, the Anisa Model recognizes the need for educators as well as medical professionals to concern themselves with the family unit as the prime target for preventive and promotive health and education services. The vast body of knowledge about child development--its biological and psychological aspects--must be made

available to all parents in an applicable form that they can truly use. We recognize the immense nature of this undertaking, yet feel confident that this is the direction in which to move if we are intent on strengthening families, preventing and solving children's health problems, and enhancing children's psychological development. As will be seen in the following discourses on preconceptional and prenatal care, this process must begin well before the child is even born if optimal conditions are to be achieved. Ignorance on the part of the parents about any aspect of the child's prenatal requirements--for example, appropriate nutrition or avoidance of teratogens--can undoubtedly influence the entire course of the child's future development. Thus it is of paramount importance that parents have access to applicable information concerning their children's biological and psychological growth from the very beginning. Such access implies the opportunity to consult with competent professionals from a number of disciplines to obtain practical assistance in all aspects of child rearing.

> Comprehensive care of the child implies the identification of all problems which might be expected to interfere with his optimal growth and development, the provision of carefully planned measures to ameliorate those problems identified, and the provision of those services needed to prevent the development of anticipated problems (Wallace, 1968:1841).

As it is not possible for any existing community structure or for any one discipline to provide such comprehensive services, a new conceptual model is therefore required to create a new system capable of meeting this challenge. For example, just as the use of health teams has been institutionalized in hospital practice, so the multidisciplinary team approach must now be translated to the community level in order to meet the

widely diversified needs of growing families and of children of all ages.

The Anisa Model provides the coherent theoretical framework essential to the accomplishment of such a complex task. By placing education on a scientific basis, it is capable of organizing the vast body of knowledge about children's growth and development, and of making that knowledge directly available to parents in a practical, applicable form. We envision the development of a unified support system consisting of home-based, school, and community-centered components whose explicit purpose is to further the biological integrity and psychological development of children through increasing the competence of parents in performing their roles as the children's first educators and health providers. It is the parents who arrange environments and guide interactions throughout the child's crucial formative years. It is they who not only shape the child's initial health, but indeed model and direct the development of health habits that will form the basis of the child's health practices for the rest of his life. And yet, in spite of the preponderating role that parents play in the formation of the next generation, society offers very little help to them in terms of specific, informed, continuous assistance.

> As parents search for guidance in their parenting tasks, they find little in the offerings of adult education specifically focused on their concerns. Education for family and personal competence, although available in a great deal of voluntary, community, and health and welfare agencies, is disparate and rarely offered in a comprehensive manner in any community. . . . A parent may turn to the vast supply of books and pamphlets to discover the answer to his question of the moment. He may become a serious but solitary student of the changing literature on child development, and read extensively. He is faced with the problem of selection and will find many questions and ambiguities. He studies alone, without guidance. Unless he obtains a carefully selected bibliography, his choice is random and his

> chore never-ending. It is unlikely that he would study any other subject in this disorganized fashion. As one young mother entering a parent education class said, 'I became so confused and disturbed by reading what appeared to be contradictory advice that I simply quit reading' (Pickarts and Fargo, 1971:75-89).

Burton White concurs:

> Sophisticated, extensive, and detailed information about the growth of the young human, and especially about the causes of good or poor growth, has been in remarkably short supply in spite of all the opinions and all the words that have been written on the topic . . . as I look about my office at the several hundred books on young children that line my shelves, I know that parents cannot find in them the basic information they ought to have. Such a situation, by the way, is an ideal one to stimulate all sorts of misinformation. . . . By and large, up until very recently, if you wanted legitimate information about raising a very young child, I frankly think you would have been better off asking an intelligent well-put-together-mother of four or five children than if you had tried almost any other approach to the problem (White, 1975:114-115).

In response to the evident need expressed above, and to the growing realization of the importance of very early education, we foresee the development in the near future of institutional support for parents, and thus of the training of professional parent educators.

A recent Gallup poll of the public's attitudes toward the public schools (Gallup, 1976:187-200) found that 77% of the public felt that parent education courses should be offered at convenient times as a regular part of the public educational system. Furthermore, 70% of these people indicated that they were willing to pay additional taxes to support such programs. It is interesting to note that 85% of young parents (under 30) and of nonwhite parents were in favor of the idea. The author of the survey comments that the public at large, the parents, and the teachers have all shown their willingness to work more closely together to improve the quality of education for children. "What has been lacking," he em-

phasizes, "is a modus operandi."

The need for a theoretical framework equal to the design of such a system is apparent. The necessity of a multidisciplinary team approach in order to meet diverse needs--of parents, teachers, teenagers, children, and infants--is noteworthy, too. It seems likely that an entire profession dedicated to serving communities as parent and family life educators will emerge in the near future.

Currently, the professional who most commonly finds himself in the position of providing parent education is the physician. Although he has traditionally been called upon to give advice to parents concerning children's health and physical growth, he is increasingly being sought for guidance concerning learning disabilities and other behavior problems. Unfortunately, pediatricians are not given extensive training in early childhood education and are not equipped for this particular task. Dr. T. Berry Brazelton, an eminent Harvard professor and pediatrician, comments on this problem:

> After seven years of training to become a qualified pediatrician, I was ready to step out into the world of private practice. But it was too big a step. I knew by then that I was in no way fitted to understand children or their parents, and I was not content to stick to their physical symptoms. . . .
>
> Now, over twenty years later, I realize more than ever that medical school training in physiological problems helps a pediatrician only a small part of the time. In a sixty- to seventy-hour week, only 15 percent of my time is spent in doing physical examinations and giving advice about physical symptoms. This 15 percent is fascinating and vital, but it is facilitated by antibiotics, good clinical facilities, and referrals to experts in the appropriate field. The other 85 percent of my time is made up of advice, guidance, and counseling about psychological or developmental problems. . . .
>
> Before beginning practice, however, I could only guess at this need for psychological understanding (1969:xvi).

Medical schools are gradually increasing their emphasis on developmental psychology, the educational aspects of early childhood, and the interactive aspects of consulting with parents rather than simply dispensing authoritative advice. However, if parent training is to become widespread in the United States, it is clear that other professionals in addition to pediatricians must become involved in this process. There are many reasons for this; one is that the neediest children are the ones least likely to be seen by a physician (whereas school personnel would see them): in 1973 about 20% of poor children and 15% of non-poor children had not been seen by a physician for at least two years (U.S. Health, 1975:408). A closely related aspect of this is,

> The poor child generally has a diversity of health impairments; no one individual is particularly competent to diagnose or treat all of these problems. Thus the team concept is necessary if the complete physical, mental, and social wellbeing of the child is to receive more than lip service (Adler, 1968:52).

The team approach not only applies to professionals, it also has implications for organizing groups of parents. Parent educators have found time and again that one of the most beneficial and influential aspects of the entire program was the support that parents felt in gathering together with other parents who were confronted with similar problems. So great is this need for group support amongst parents that the isolation of mothers in their homes and of teachers in their classrooms with rare opportunity for supportive consultation or sharing with peers has been cited as one of the major problems in child care and education today (Schaefer, 1973:28). Dr. Brazelton, author of three excellent parent education books--Infants and Mothers, Toddlers and Parents, and Doctor and Child--emphasizes the real value of having parents meet with

other adults and support each other's efforts in raising children:

> Adults need their peers for many reasons--support, stimulation, and an opportunity to see themselves through others' eyes. The responsibility which an adult feels when he is trying to listen to a child--to understand what the child means, what he is trying to say, to support and encourage him, and then to lead him on into more complex thinking--is strenuous and demanding . . . mothers are surprised and even ashamed at their own lack of endurance with small children. But they needn't be. There is nothing as exhausting as giving attention constantly to someone else, as trying to concentrate on one line of action while another equally important is in the offing, as trying to keep a train of thought which is interrupted over and over, as being aware of the tremendous responsibility that one has for the inquiring, resourceful, nosey little being in the next room (1974: 17, 83).

Thus, future parent training programs may need to consider several of the factors discussed above: providing group support and encouragement, considering parent-initiated content arising from parents' immediate concerns and interests, providing services to all citizens, and having access to multidisciplinary teams capable of approaching problems from various angles. One might add that the primary long-range goal would be to make the parents more competent and able to deal with their own families' needs and to increase the quality of life for themselves and for their children.

A parent training program interested in the health and education of children would ideally begin before the child's conception to assure the best possible conditions for the child's growth. It would provide continuous support for parents and children throughout the various phases of development: preconception, prenatal, perinatal, infancy, preschool, school-age, adolescence, and adulthood. A brief outline of the beginning phases of the proposed program is presented in the following pages.

B. Prerequisites to Parenthood: Before Conception

The first phase of the program would take place during the year before the child's conception. It might be termed "pre-parent training" as it would focus on the essential prerequisites to creating and maintaining a stable home and positive family life. The following issues could be covered in the curriculum.

1. The function of the family. Scholars estimate that there have been at least 4000 identifiable human societies, all of which are fundamentally based on family groups. Margaret Mead writes:

> The family is, as far as we know, the toughest institution we have. It is, in fact, the institution to which we owe our humanity. We know no other way of making human beings except by bringing them up in a family. . . . We know no other way to bring children up to be human beings, able to act like men and women, and able to marry other men and women and bring up children, except through the family (Leslie, 1973:3-4).

Functions to consider include the following: biological, procreation, protection, economic security, socialization, education, religion, and recreation.

2. The purpose of marriage. As one of the main purposes of marriage is to bring forth children, this should be discussed, including the purpose of children in releasing the parents' potential and in their ultimate fulfillment. Hopefully, children will be seen as central to the parents' purpose, personal development, and growth; and not as an interruption or diversion from the main stream of their lives. The goals of the marriage should be on a firm, clear, and mature basis, with a shared sense of purpose and responsibility towards the individuals involved and toward society at large.

3. The quality of the marital relationship. This should be carefully dealt with, emphasizing good emotional health and mutually supportive and constructive relationships. The couple's multiple roles as partners, parents, and professional people warrant consideration.

4. Long-range commitments implicit in raising children. If both parents want children they need to be realistically aware of the commitment (on numerous dimensions: spiritual, emotional, intellectual, and physical) implicated in that undertaking. The wife in particular needs to understand the demands of motherhood and be ready and willing to take on that role. The father's responsibility, expected role, and degree of involvement should also be thoroughly explored. Their long-term plans, career aspirations, and time commitments should be carefully considered before the children come.

5. The role of the father. This area should be addressed in considerable detail, exploring his traditional role and considering new possibilities for him in terms of more active involvement with the children. Examples of topics which directly concern the father's role include: pregnancy, childbirth preparation classes, preparation of the home environment for the mother and infant, postpartum care and family reorganization, family planning, sibling relations, discipline, and general development. Parent training programs must make concerted efforts to meet the needs and release the potentials of fathers as well as of mothers. Burton White (1975:260) feels that all high schools should require participation in courses on child development and child-rearing practices for both boys and girls because considerable evidence demonstrates that the parental roles of both fathers and mothers are

being seriously undermined with grave consequences for children. For example, several investigators found that father-absent children often suffer from intellectual deficits, generally have lower achievement motivation and experience less career success, have more difficulty in forming lasting and meaningful interpersonal relationships, and are more likely to have marital and parenting problems (Biller and Davids, 1973:48-57).

Fathers may be "absent" or essentially inaccessible even though they live at home: Bronfenbrenner (1974:54) cites data that indicate that fathers spend relatively little time interacting with their infants--an average of 38 seconds per day!

Therefore, fathers will assume a key role in the proposed parent and family life program.

6. Family finances. Economic considerations ought to include the long-range ec ıcational and career goals of both parents to ensure a steady source of income sufficient to support children. The cost and method of detailed budgeting for children over a long period of time should be studied, including medical care, food, clothing, safe housing, furniture (cribs, highchairs, playpens), various supplies from diapers to books and toys, and the cost of care in terms of the parents' time and that of other caretakers: babysitters, day care centers, and eventually schools.

7. Family planning services. Various contraceptive options should be understood by both parents to help them time, space, and if desired, avoid having children. This aspect should emphasize the long-range plans of the family as well as immediate contraceptive needs.

8. Child development. Both prospective parents need to know a great deal about prenatal, infant, and child development in advance so that they will be able to provide the appropriate environments and experiences for their children's future growth.

The above issues, along with others which would surely arise during the course of the program, are meant to address the fundamental realities and concerns of parenthood from the perspective of several disciplines: philosophy, religion, psychology, sociology, economics, education, and others.

Accompanying the above psychological preparation for parenthood, and also taking place during the year before the anticipated conception of a child, would be a thorough program of biological preparation in the form of health assessment and health education to ensure that both parents are in the best possible physical condition. Motivation to practice good health habits is perhaps easiest with prospective parents, because no matter how careless they are of their own health, most parents want good health for their children. Thus it is an opportune time to emphasize preventive screening measures, health maintenance, nutrition, and general health practices.

The following list suggests several major aspects of a "preconception" health program.

1. Take health histories of both parents, their families and relatives, including a detailed account of the mother's reproductive history (pregnancies, deliveries, complications, miscarriages, abortions). If the new child is not the first, examine the current children's health histories.

2. Do comprehensive medical examinations on both parents and current children, including gynecological and obstetrical examinations for the woman. Routine laboratory tests should also be done.

3. Update the entire family's immunizations. Rubella is a specific case in point. Also, worldwide travel and exposure to worldwide travelers during pregnancy are now common.

4. Do genetic counseling, referring to the family medical history, performing laboratory tests to determine risks, and consulting with the prospective parents.

5. Dental care should be brought up to date.

6. Management of any health problems found above should be accomplished before the conception of the new child.

Although the above items stress health assessment, health education plays the prominent role in the following areas.

7. Nutrition education--ideally, both parents should maintain excellent health beginning at least a year before conception. Proper diet is of major importance, particularly for the mother, as the baby's body is literally constructed from the foods she eats. Attention must be given to a balanced diet of wholesome foods containing the necessary protein, calories, vitamins, and minerals. Avoidance of drugs, alcohol, cigarettes, and perhaps even food additives is advisable; and both parents should have a basic understanding of teratology.

8. Other important health practices include cleanliness of the family, clothes, food, and the home in general. Exercise, rest, recreation, and a moderate lifestyle and schedule are also desirable. The above practices should be reasonably sane to ensure a safe environment for the

child and to provide that child with parents who have the health, balance, stability, energy, and stamina necessary to keep pace with a growing youngster.

As outlined above, under ideal circumstances the following conditions would be met prior to conception: stable marriage, economic security, family planning, genetic counseling, both parents want children, understand child development, are in excellent health, and are practicing sound habits of nutrition, cleanliness, exercise, rest, etc.

A final factor arguing in favor of a careful program prior to conception is that by the time pregnancy can be confirmed (a minimum of six weeks following the last menstrual period), most of the organs of the fetus have already been formed. Thus it is best for the parents to be fully prepared biologically and psychologically well before the child's conception.

C. Pregnancy and the Perinatal Period

The second phase of the proposed parent training program would center around pregnancy and the perinatal period, with the primary purpose being to ensure the delivery of a healthy baby to a healthy mother. The psychological preparation of both parents and their education in the basic elements of child care would also continue throughout this period.

Ideally, maternity care should be a continuum for the individual woman extending from the time of her conception to the termination of her reproductive years. Even this context is none too broad when considered in the light of intergenerational studies that demonstrate that nutritional or environmental insults to grandmothers are reflected in

shortcomings of their grandchildren (Birch, 1971). Historically, maternity care was considered of no particular consequence until the 20th century. Examination of pregnant women before that time was carried out merely to determine whether or not pregnancy existed. In the first textbook on maternity care, printed in the early 20th century, the extent of medical concern was that it was recommended that the patient be seen once by a physician four to six weeks before the expected date of delivery. Not until 1924 did standard textbooks suggest what is known today as prenatal and postpartum care. At that time they called for two examinations, one six months before and one one year after delivery. Not until 1961 was family planning included in standard obstetrics textbooks. By contrast, today's obstetricians feel that complete maternity care must begin with early advice concerning contraception and the availability of contraceptive services to requesting men and women of all ages. They also advise women to see their physicians before they expect to begin a pregnancy, in order to create optimum conditions for the future child's growth. Furthermore, they feel that pregnancy testing services should be widely available (which they are not today). Early confirmation of pregnancy is highly advantageous, as are continuous prenatal and postnatal care. As families decrease in size, such care will become a viable universal practice because it will be possible to devote more health efforts toward each individual pregnancy (Pearse, 1973:231-242).

Restatement of Need

In spite of remarkable medical sophistication in the care of the

expectant mother and the newborn infant, the United States has great unmet needs in terms of delivering such services to all mothers and infants. In one study (Dott and Fort, 1975:854) of over 70,000 births it was found that with no prenatal care the infant mortality rates were between four and ten times greater than the rates for women receiving continuous prenatal care (more than nine visits); even when race, poverty, geography, and birth weight were considered. The mortality rates were twice as high for infants born outside of hospitals. The authors concluded that "significant health problems in obstetric and pediatric care continue to exist in the United States."

In agreement with the above opinion, Dr. C.A. Miller (1975:355-357), President of the American Public Health Association, proposed a National Health Service for Mothers and Children which would extend prenatal care, obstetric and midwifery services, homemaking assistance and mothercraft, postnatal care for mothers and infants, and family planning services to all families in the nation. Not only the poor need these services: he cites one study of non-poor white infants served by private pediatricians which showed that the quality of their care met standards set by the American Academy of Pediatrics only half of the time.

> Preventive services which should be routine for everyone are maintained at marginal levels at best, and at grossly unsatisfactory levels for disadvantaged people. Deficient immunizations, inadequate prenatal care, and missing well-baby health checks are conspicuous examples of neglect.

In summary, he felt that the key to preventing the vast majority of health problems was stronger families, and that that strength must come increasingly from community-based supports (Miller, 1975:356).

Medical Considerations

Although it is far beyond the scope of this paper to elaborate the details of obstetric care, a cursory list of minimal guidelines is offered below (adapted from Tarjan, 1966:435-436):

1. Early diagnosis of pregnancy with prompt and continuous prenatal care: close medical supervision.
2. Special attention to diet, providing all essential nutrients and assuring appropriate weight gain.
3. Prevention of low birth weight and prematurity.
4. Avoidance of drugs, alcohol, tobacco, etc.: protection of the fetus from unnecessary medications and all potential teratogenic agents.
5. Protection of the fetus from infections through careful and intensive treatment of mother if infections occur. (Prior measures should have covered immunizations and complete maternal exam for infections and disease.)
6. Fetal monitoring throughout pregnancy and during labor to diagnose as early as possible any conditions that might require special treatment before or after birth, and particularly to identify the high risk pregnancy.
7. Judicious use of medical intervention in threatened abortions, with clear delineation of symptoms or situations necessitating therapeutic abortions.
8. Physical and psychological preparation of mother for labor.
9. Availability of proper facilities and staff for normal and special deliveries.

10. Avoidance of unnecessary drugs, anesthetics, and instrumentation during labor and afterwards.
11. Avoidance of separating mother and child, keeping them together most of the time if at all possible. (Child abuse has been correlated with such separation; in addition, close observation of maternal emotional tone may identify potentially abusive mothers and alert staff to an infant "at risk" (Lake, 1976:129).)
12. Careful examination of the newborn immediately and over time for congenital anomalies and other disorders; including comprehensive screening and prompt treatment for genetic diseases such as inborn errors of metabolism; and intensive care for any suspected high risk factors.
13. Careful postpartum examination and care for the mother.
14. Accurate and complete recording of pre-, peri-, and postnatal events, including social and economic data necessary for the establishment of a risk register. This history should include the Apgar score (heart rate, respiration, muscle tone, reflex response and color), and a detailed profile of risk factors, for example: genetic considerations, stress during pregnancy, illegitimacy, low birth weight, and prematurity. In addition, a detailed history of the mother's reproductive-obstetrical history: a complete account of previous pregnancies, deliveries, miscarriages or abortions, should be on record.

As brief and simple as the above minimal guidelines may seem, for a considerable portion of the American population they represent goals rather than realities. And yet obstetrics in this country is facing challenges that go far beyond the obvious need for the provision of universal, comprehensive prenatal and postnatal care. Serious questions regarding our entire tradition and method of delivering children are being raised: should medication be administered during delivery when it is known to affect the infant's functioning for at least a month afterward? Should newborns be separated from their mothers for any length of time when there appears to be a "maternal sensitive period" during which critical bonds are established? Should the infant be isolated in the newborn nursery, perhaps the most inappropriate and over-stimulating environment that could be imagined for a newborn? Many such questions are being raised which challenge the first principles and basic assumptions of maternity care as it is presently delivered in this country. A considerable body of research is accumulating which suggests that many of our unquestioned methods of delivering babies may require radical changes, changes which would be reflected in an entire restructuring of maternity care in hospitals. Further developments in this field may well result in a major refinement of current medical standards.

Psychological and Educational Considerations

A comprehensive curriculum for expectant parents might cover the following issues in a variety of ways, utilizing various specialists from the multidisciplinary family life team in private consultation and

in small group settings to answer the specific needs of each parent in a highly personalized, warmly supportive manner.

> It should be emphasized that the health team should not be like a cafeteria line in which the patient goes from office to office or chair to chair seeking a little helping of nutrition and a small piece of social service (Pearse, 1973:238).

The parents themselves provide a major source of warm concern and supportiveness, particularly in group classes where expectant parents are able to share concerns with other couples and to meet with "experienced" couples who have recently been through the training and have just had children. The spontaneous exchange of questions and answers (and of hopes and fears) serves to create a community climate of shared feelings which can be equally helpful to anxious expectant parents as any particular facts or figures. These affective factors, particularly those of security, safety, and trust, can be greatly enhanced by the presence of good models. In the past, the extended family served many of the functions under consideration here; in looking to the future we would do well to contemplate those ancient patterns.

1. Affective needs. The first order of business, accompanying medical considerations, might be to address the expectant mother's anxieties. An eminent obstetrician, Dr. Sheldon H. Cherry, summed up the most common causes of anxiety during pregnancy as:

> Fear of pain and/or death. Taboos regarding reproductive functions. Ambivalent feelings about children. Inability to accept the responsibility of motherhood. Distortions of the body, resulting in the feeling that beauty and femininity are lost (1973:18).

He felt that women can work out these potential problems with the aid of their physicians and husbands. As many expectant fathers are

equally fearful of pregnancy, one can readily see the potential value of an educational program designed to assist both expectant parents in resolving their anxieties. Also, the affective needs and attitudes of other family members, such as siblings of the expected child, should be considered.

2. Fetology. A course in fetology could give the parents an understanding and appreciation of the growth of their child from two single cells to a fully developed infant. It should help them comprehend the various stages of pregnancy, emphasizing normal growth and development yet also touching on danger or warning signs and teratology.

3. Childbirth preparation. A class on the Lamaze method of natural childbirth might be offered to prepare both parents for the events of labor and birth. Body building exercises, contraction-relaxation exercises, and breathing techniques may be practiced. (For details, see Cherry, 1973:78-115.)

4. Postnatal care and family reorganization. The final prenatal class may provide the transition from preparation for birth to preparation of the home environment for the new infant. Arrangements should be made for postpartum care so that one individual may stay with the mother to offer supportive care throughout labor, delivery, and the often neglected immediate postpartum period. This supportive role may be played by one or more people: the father of the baby, other relatives, a nurse, obstetric technician, or a health student. However, the continuity of personalized supportive care is of great importance in that new mothers need both consistent emotional support and access to accurate information about their condition and that of their

baby. If the helping person is not professionally trained and experienced, accurate information should be readily accessible via telephone consultation, a visiting nurse, or other means.

One study of a supportive care program found that the numbers of questions mothers asked when they returned home with the baby increased approximately 25 times over those they asked at the hospital (Benfield, 1975:1-3). Thus it would be wise to assess the parents' "know how" in caring for infants and to give them a detailed curriculum concerning the baby's needs during the first few months. Topics to cover might include preparing a safe home environment, accident prevention, first aid, sanitation, nutrition, early stimulation, sleeping habits, attending to the parents' and siblings' needs, and family reorganization.

5. Nutrition. The subject of nutrition is of such primary importance throughout pregnancy and the child's first few years of life, particularly during infancy, that the proposed parent and family life program would devote a great deal of time to its study. This study would not only cover the science of nutrition, rather it would have an equal emphasis upon the application of scientific understanding. The widespread need for such a course can be seen from the following statement made by Dr. Charles H. Bauer:

> As Director of the Premature Institute at the New York Hospital--Cornell Medical Center--for ten years, I taught and directed the education of physicians and nurses from all parts of the United States and the world in the latest techniques in the care and feeding of infants. Nearly all of these professional persons agreed with me that most mothers had little, if any knowledge of the proper nutritional needs of their babies, and they needed assistance. In my own fifteen years of private practice of pediatrics, I have been aware of this same problem. I feel very

> strongly that most mothers would like to receive guidance in feeding their babies. Most physicians caring for newborn babies attempt this, but have neither the time nor the inclination to go into any details (Castle, 1973:V).

Dr. Bauer recommends a book by Sue Castle entitled, The Complete Guide to Preparing Baby Foods at Home. He feels that this book, in conjunction with professional consultation, fills the vacuum and need described above. It is based on sound medical knowledge, is up to date, comprehensive, and practical. We share his recommendation, and refer to this book in the following passages. The reason that special attention must be given to the food eaten by babies is reflected in the following quote from a 1961 report by the United Nations' FAO/WHO Expert Committee on Food Additives:

> Foods that are specifically prepared for babies require separate consideration from all other foods as regards the use of food additives and toxicological risk. The reason for this is that the detoxicating mechanisms that are effective in the more mature individual may be ineffective in the baby. The committee strongly urges that baby foods should be prepared without food additives, if possible. If the use of a food additive is necessary in a baby food, great caution should be exercised both in the choice of the additive and in the level of use (cited in Castle, 1973:26-27).

Thus, nutrition during pregnancy and lactation, though mentioned under medical considerations, is raised again to emphasize the importance of having both parents understand the key role of nutrition at this time:

> In man, the brain is adding weight at the rate of one to two mg/minute at birth and goes from 25 percent of its adult weight at birth to 70 percent of its adult weight at one year of age (Birch, 1972:777).

The diet should be excellent both in terms of what nutrients are given to the mother and to the newborn; and in terms of what substances

are avoided. Breast feeding is generally to be encouraged versus artificial feeding of any kind. (For a detailed rationale, see Jelliffe, 1971:967-1024). It is also important to consider infant feeding in terms of the gradual introduction of new foods: what, when, and how.

Commercial baby foods are under question for numerous reasons. Most of them contain excess amounts of sugar, modified starches, salt, and water, not to mention artificial colors, flavors, and preservatives. They also cost twice as much as the same foods in non-baby food form. BHT, one of the most widely used additives in baby foods in America, has been banned from use in baby food and restricted from use in other foods in Britain and many other countries because it has been shown to produce allergic reactions and is possibly related to cancer. Another preservative, sodium nitrate, was strongly criticized in 1970 by Dr. Samuel Epstein of the Children's Cancer Research Foundation, whose research has shown that it is potentially harmful to infants. The salt content of baby food is extremely high: in meats it is five to six times the amount in fresh meats; in vegetables, six to 60 times the amount in fresh vegetables; and it is thought to be a contributing factor to the development of hypertension in adult life (Castle, 1973:XVI-XVII, 26-29).

The high sugar content of many commercial baby foods may well contribute to adult obesity. Studies by Jean Mayer at Harvard and Gordon Kennedy at Cambridge University in England show that in infants, the appetite control system is not yet fully developed, and that babies probably stop eating because they are literally full. Thus most babies cannot be overfed by parents who try to make them consume a larger

volume of milk or food. However, they have very little defense against being fed an over-concentrated diet. Jean Mayer comments:

> For aeons, young infants have consumed mostly breast milk--with 65 calories per one hundred millilitres. Solid and semi-solid foods fed young infants may contain up to 200 calories per 100 millilitres. Prepared baby foods . . . (which often have considerable added sugar) contain more calories per unit than breast milk, in many cases two or three times as much! (1975:200).

He further comments that this may be a major problem because studies have demonstrated that overfeeding very young animals leads to the development of extra fat cells, which presumably persist throughout life. If has also been shown that obesity is most stubborn when it has occurred early in life. Recent studies in England have further suggested that babies who are fed large amounts of sugar have a tendency to hardening of the arteries and heart trouble as adults (Castle, 1973: XVII). The above examples indicate the extent to which unnecessary and quite possibly harmful ingredients are present in commercial baby foods. Although it is perhaps more difficult to prepare baby food at home, Sue Castle's book is full of helpful ideas which make the process efficient, convenient, and even interesting. Although it is difficult to completely avoid additives, they should be served only occasionally for the sake of necessary convenience.

Clearly, a complete discussion of nutrition for pregnant women and infants could easily fill volumes. We feel that an educational program could cover this material adequately and appropriately, providing references, recent research and scientific advances, balanced and sensible advice, and a support group comprised of medical and educational professionals and other concerned parents. The problem of proper nutri-

tion for mothers and young children is one that rests solidly on both the health professions and the educational ones. Behavior change in such a basic area as diet will no doubt require expertise from psychologists and educators, as all of us know that knowledge in itself does not necessarily change behavior. Thus, in this context, health education is more of an educational, sociocultural, and psychological matter than a purely medical or nutritional one. However, we feel hopeful that parents will want the best for their children, and that their evident felt need and recognized problem will generate interest and lead to action, particularly when help is provided in the context of a supportive group (Ademuwagun, 1974:14).

D. Teenagers' Special Needs in Preparation for Parenthood and Family Life

Teenagers represent a prime target for parent education programs due to their age and urgent needs. The fact that 25% of today's teenagers are already parents (although one rarely hears of the one million illegitimate fathers) amply demonstrates the need for teenage parent education (Arman, 1976:1). Indeed, parent and family life education should be an integral part of the school curriculum right from the beginning, as children and youth need to understand the responsibility involved in raising a family. If young people held a more realistic view of parenthood, perhaps much of today's pathology could be prevented.

As parenthood is one of the most complex tasks any of us face in life, general preparation of youth for their future roles would necessarily cover the wide range of subjects discussed above in the section

on "Prerequisites to Parenthood: Before Conception:"

1. The function of the family;
2. The purpose of marriage;
3. The quality of the marital relationship and the couple's roles;
4. Commitments implicit in raising children;
5. The role of the father;
6. Economic considerations;
7. Family planning and contraception; and
8. Prenatal, infant, and child development.

In many respects their curriculum would parallel the one for adults as outlined above, however, additional services to address their special psychological and biological requirements should be developed.

Special emphasis might be given to:

1. Reflection on one's own family style and experience. Students might be encouraged to review their own family's habits for the purpose of identifying features they wish to carry forward, discard, or change in constructing a viable model of family life to serve as an ideal for their future family style and pattern.

2. Mate selection. In light of the purpose of marriage and the functions of family life, youth might be encouraged to place their dating and interpersonal involvement into perspective in relation to their long-range goals, and to select mates carefully according to appropriate attributes.

3. Career plans for both sexes. This topic is extremely important, especially for girls. Throughout the country, pregnancy is the major cause of high school female dropouts. In fact, most schools expel pregnant students (Osofsky, 1973:888). It is very difficult for such young mothers to further their education, to prepare for a challenging profession, or even to earn a decent income. They experience great dif-

ficulty in releasing their own potential which leads to frustrations not only for themselves, but for their children, immediate families, and the community at large. Estimates of the economic cost of such predicaments are staggering enough to stimulate society to search for better alternatives for financial reasons alone:

> The typical girl who became pregnant out of wedlock in her teens and required welfare assistance might be expected to deliver nine out-of-wedlock pregnancies during her reproductive years. The cost to the social welfare department over the course of the girl's lifetime would average $100,000 (Osofsky, 1973:889).

Ten such cases cost a million dollars, and the figures (estimated in 1965) do not take into account recent increases in expenses due to the rise in the cost of living over the past ten years. Perhaps vigorous programs to help teenage girls to plan and prepare for careers and to formulate long range educational and professional goals for themselves would help to prevent some of these tragedies.

Aside from the 25% of the high school girls who become pregnant, virtually all students have to make decisions about marriage, starting a family, jobs, careers, and college. It would therefore seem useful to help all students to think through long-range plans to coordinate family and career commitments.

4. Contraception, sex education, and family planning. As stated above, this is a primary and urgent need. Although one's personal conviction may be that chastity should be strictly practiced by both sexes and that marriage provides the only appropriate channel for the sex impulse, it should be recognized that the current state of affairs is apt to continue for some time and that it requires immediate attention for

obvious biological, psychological, and social reasons. Therefore, while the "why" questions should figure prominently in the teenage parent education programs: "Why marry? Why raise children? What is the purpose? Why not . . . ? What are the options?", it is evident that the provision of contraception information and services to all teenagers is a vital and pressing concern.

5. Prenatal, infant, and child development. Comprehensive courses could inform all students of the basics of parenting and child rearing. Ideally, all high school students should have opportunities to care for infants and young children under competent adult supervision. Such laboratory practicums in child development could prepare teenagers for immediate employment as baby sitters, camp counselors, and tutors as well as for their future roles as parents (Kruger, 1973:7). Burton White (1975:260), in his book, The First Three Years of Life, feels that in the near future all "high schools will require participation in courses on early human development and child-rearing practices for both boys and girls." This certainly makes sense when one considers that almost all of the students will soon become parents.

E. The Continuous Role of Parents in Child Health and Development

A large number of reviews (Jason, 1975:33-46) demonstrates the value of programs that assist parents in creating environments that promote sound health and development for children from their earliest years. Both home-based and community-based interventions have been shown to be effective, and a variety of approaches utilizing professional and para-

professional personnel have produced significant positive results, demonstrating that combining parent and child interventions helps to stabilize the gains in the children's growth. The most common goal of such programs has been to create a supportive learning atmosphere in the home by assisting parents in applying elementary teaching skills, thereby accelerating the children's intellectual development.

It is evident from studying reviews of such programs that their immediate and long-term effectiveness could be greatly enhanced by adding strong health, nutrition, and social work components. This is quite obvious in the case of disadvantaged families; however, it may not be quite as obvious in the general population. This section will touch upon the important roles all families play in providing the first health support system for children, and will explore ways in which families can maximize their effectiveness in the promotion of child health.

> Health has a great deal to do with the quality of our lives. It is both an end and a means in the quest for quality, desirable for its own sake, but also essential if people are to live creatively and constructively. Health frees the individual to live up to his potential (Gardner, 1968:52).

There is considerable literature on the importance of the family in the prevention, cause, and treatment of illness. This research contains some very basic, but largely neglected implications for educational and health policy planning (Vincent, 1963:109). One role of the family, and particularly the parents, in relation to children's health and illness is illustrated by the following example. Parents are usually the first people to recognize that children are "not acting like themselves." The symptoms displayed and/or discussed by the child are perceived, evaluated, and acted upon by the parents, who function as

the initial diagnosticians. The parent's assessment of the situation not only determines whether or not and when the child might receive medical attention; it also influences the manner, accuracy, and completeness with which the child's condition is communicated to the doctor (Vincent, 1963:114). One might add that the parents' reactions also have considerable bearing on how the child feels about his condition. These are areas in which parent education may prove helpful. Inappropriate decision-making that results in under- or over-utilization of medical services by adults is fairly well documented: a large percentage delay in the face of warning signs or symptoms of serious disease; few return for routine preventive screening examinations when advised to do so; and the majority fail to comply with physicians' recommendations for treatment of their medical problems (Lewis, 1974:91). Although there have been several studies attempting to explain these wide variations in the utilization of health care services, only a minor part of the variation has been explained (Battistella, 1968:308-318). By contrast, a potentially fruitful area of research, where there have as yet been very few studies, is in determining the origins of health attitudes, beliefs, and behaviors (Lewis, 1974:91). One such study (Pratt, 1973: 61-69) examined the relationship between two different child rearing methods and the children's subsequent health care practices. One method was termed "developmental," whereas the other was labeled "disciplinary." Parents employing the developmental approach encouraged appropriate levels of autonomy and responsibility, supplied reasons and information, and rewarded good behavior to a greater extent than they punished misbehavior. Disciplinary parents, on the other hand, stressed unquestioned

obedience to rigid behavioral specifications, emphasized punishment, and made little effort to develop informed or independent performance on the part of the children. It was found that children raised by the developmental method attained significantly higher levels of health care practices. The author hypothesized that the disciplinary method not only inhibited the development of these capacities but "produced instead a superficial and rigid conformity to adult standards and failed to obtain commitment or even sufficient persistency to enable the child to perform successfully the elementary routines of caring for his own body" (Pratt, 1973:68). The author concluded that developmental child rearing methods were significantly more effective than disciplinary methods in developing the child's capacities and resources so that he would be able to cope effectively and to take proper care of himself. These findings were generally consistent with previous child rearing studies that showed that developmental (versus disciplinary) approaches tend to enhance competency, self-reliance, self-control, self-esteem, and positive social behavior. The findings also provide insights that may be applicable to programs intended to help parents shape the formation of children's health behaviors.

A matter of the utmost importance to the child's biological and psychological health is that his parents understand the uniqueness of his disposition and of his distinctive style of responding to the environment. Children differ in temperament from birth. In a classic study entitled, "The Origin of Personality" (Thomas et al., 1970:102-109), it was found that the behavioral profile of a child, that is, his characteristic temperament, is discernible even as early as the age of

two or three months. This fifteen year long-term study documents that the original characteristics of children's temperaments tend to persist in most children throughout their growth. Many of these traits suggest considerable biological underpinnings. Nine characteristics that could be scored on a scale of medium, high, or low are as follows: (1) the level and extent of motor activity; (2) the rhythm and degree of regularity of functions such as eating and sleeping; (3) the response to novelty in terms of approach or withdrawal; (4) the adaptability of behavior to environmental changes; (5) the threshold and sensitivity to stimuli; (6) the intensity and energy level of reactions; (7) the degree of distractibility; (8) the child's attention span and persistence; and (9) the quality of the child's general mood or disposition: whether cheerful or given to crying, pleasant or irritable, friendly or unfriendly. These attributes tended to cluster into three general types of temperament: easy children, slow to warm up, and difficult children. These categories are only a general guide, and many children displayed a mixture of traits in various areas. However, the authors felt that if parents had a detailed understanding of their children's temperamental makeup, and fully recognized the vast difference between siblings, they would be more able to adapt their interactions with each child to maximize his unique development. For example, with a difficult child modes of interaction that work well with other children may fail. And yet, if the parents are inconsistent, impatient, or punitive in their handling of the child, he is much more likely to react negatively than other children are. Parents who recognize the child's need for unusually painstaking handling may be able to be more objective and consistent by

taking into full account the child's temperamental style. The authors, who worked with 85 families over the 15 year duration of this study, felt that most parents could change their mode of interaction in order to achieve healthier relationships with their children. They viewed the professional's role as one of guiding the parents in recognizing the child's uniqueness in temperament as well as in physical characteristics. In other words, parents need to understand that a given environment does not have the identical functional meaning for all children. This sense of each child's uniqueness from birth could assist parents in adapting their attitudes and practices to best meet the needs of each individual child. The services that professionals might render to such families would clearly not take the form of applying hard and fast guidelines or setting down rigid rules, rather the professional may offer a more objective view of the parent-child interaction and serve a consultative function in answering parents' questions. This study suggests many possibilities of ways that a parent and family life program might foster children's healthy development. It is interesting to note that the studied population consisted mainly of highly educated families, thus suggesting that consultative services might well be useful at all socio-economic levels.

Several disciplines within the domain of biology have contributions to make to parents' understanding the uniqueness of each child. Dr. Roger J. Williams (1975:329-339) is convinced that serious attention to nutrition in maintaining biological integrity will contribute greatly to our knowledge of personality states and the prevention and alleviation of personality difficulties: "It seems indefensible to assume that

people are built in separate compartments, one anatomical, one physiological, one biochemical, one psychological, and that these compartments are unrelated or only distantly related to each other. Each human being possesses and exhibits unity." At the same time, normal individuals exhibit extreme diversity: stomachs vary about sixfold in size, thyroid glands vary about sixfold in weight, and the adrenal cortex varies about tenfold in thickness. Brains differ enormously in structure and in the arrangement of neurons, some "normal" hearts beat more than twice as fast as others, and the blood of each individual is highly distinctive. These few examples illustrate the far-reaching distinctiveness each individual possesses in the biological sense. In his book, Biological Individuality (1956), Dr. Williams quips that were the degree of our vast internal differences externalized, some people would have noses the size of chickpeas, and others would have noses the size of watermelons!

One of the implications of such vast diversity in people's biochemistry is that their needs--both biological and psychological--vary enormously. For parents to provide an optimum environment, in either a physiological or psychological sense, is a feat of no small order. Achieving the best levels of health for children would require the application of civilization's highest levels of understanding. The absence of such vitally needed knowledge, in other words, ignorance, can cause untold human suffering. The application of a few bits of essential scientific information can mean the difference between health and disease, life and death. One function of parent education might be to convey the type of general scientific and technical know-how that can immediately be put to use to help improve living standards in such basic

areas as food, health, and shelter. This basic grasp of science in the service of human needs has been described as practical science literacy (Shen, 1975:265-268).

One means of promoting practical science literacy is to develop community services which provide parents with access to applicable health and educational knowledge. Dr. Arthur Engel, former Director of the Swedish Health System, speculates upon the nature of these services (1968:5-25). He envisions a comprehensive community system of health and social care as being of the utmost importance. From these facilities would emanate the educational, advisory, and preventive services essential to maintaining biological integrity. He feels that people will request a large amount of advisory and informative health service, expecting to have their health conditions examined from time to time to reveal disease at early stages, preferably in the asymptomatic stage. In regarding health as a citizen's right rather than a privilege, Dr. Engel feels that people will consult with professionals for personal medical advice in an increasing number of situations of life. The human support function will be a major one, as psychosocial and psychosomatic responses to stressful life situations have always constituted a large portion of primary care practice. Thus, Dr. Engel predicts that medical personnel training programs will, in the future, cover a wide range of biological, psychological, and educational concerns.

Clearly, if the traditional health care system is to provide such a wide range of consultative and educational services to the general public, vast restructuring of the system will need to be undertaken. One sign of this transition can be seen in the proliferation of paraprо-

fessionals. In 1966, the ratio of health workers to physicians was nine to one, and by 1980 this ratio is expected to be twenty to one (Code, 1975:627). In 1975, about four and one-half million persons were employed in health care services, and the yearly national expenditure was over one-hundred billion dollars (Schaller, 1976:7). The number of non-hospital physician visits was over 740 million, with an additional 100 million contacts being made by telephone (Parker, 1974:27). It is clear that the complexities of modern primary care make it practically impossible for the solo physician working independently to render the required quality of service; therefore patterns of delivering primary care are beginning to undergo a major transition from the single practitioner to more complex organizations. As of 1969, private practitioners still provided about 77% of all primary care; hospitals provided 19%; and the remaining 4% was divided among pre-paid practice, neighborhood health centers, free clinics, and similar institutions. Because the major shift to new institutional forms of delivering health services appears to be just commencing, this may be a propitious time to influence the development of the system, as it is in a critical period of organizational flux (Andreopoulos, 1974:187-199).

One of the key functions that may be served by a parent and family life program in each community is to provide the personalized service necessary to effectively address each family's needs. For example, the family might be given a comprehensive screening interview by a contact person, and the core information thus gathered could be computerized in a "total need" registry which would serve as the base for future referrals. The same contact person could provide consistent

guidance and service coordination for the family, offering direct counseling and home visits as well as linkages to other aspects of the delivery system. Continuous health and education supervision might thus be provided, thereby overcoming the fragmentation so common in today's human services (Leopold and Schein, 1975:595-606). This role might be assumed by a variety of professionals or paraprofessionals in various organizational settings: public health nurses, school nurses, social workers, or educational aides. Two examples of programs that move in this direction follow, one through a well-baby clinic and the other through a public school.

In recognition that medical care facilities are often the primary institutional contact for preschool children, an experimental parent education program was set up in two well-baby clinics, one in a general hospital and one in a city health department. When parents brought children to the waiting room for their regular checkups, they were invited by local paraprofessionals to participate in a bi-monthly program consisting of a developmental curriculum with educational materials the mother could learn to use at the clinic and then borrow from the lending library for the two-week period until the next session. Parents who agreed to participate were interviewed throughout the program and the children were given educational evaluations. The children's test results showed modest gains related to program participation which were maintained six months after the program had ended. Parents felt that the experience promoted the children's general learning skills, improved their behavior and attention span, helped them in skill acquisition (to learn to name colors, shapes, and sizes), and increased their

curiosity. One-third of the parents said that other family members had worked with the child and the educational materials in the home. The investigator felt that the pediatric center in an ambulatory setting could serve as an ecologically viable base for reaching parents and preschoolers. The clinic might also serve as the first contact point for further referrals to other services (Morris, 1976:73-74).

Another pilot program that sought the active involvement of parents was designed as an alternative to the conventional physical examination given to children first entering kindergarten or first grade. Over a thousand children were involved in this program, wherein health histories were obtained from the children's parents by means of a questionnaire and an interview with the school nurse. After thorough consultation with the parents, the nurse then listed problems and planned how to manage each one. It was found that the health history format detected nearly six times as many problems per student as the traditional physical examination. Moreover, the discussion with the parents uncovered many educationally relevant problems which would not be apparent from the physical examination: difficulties relating to emotional and behavioral problems, learning disabilities, family health, and the home environment. It strengthened home and school relationships and opened communication about problems requiring further education, consultation, and supervision. It further provided teachers with readily available and useful information concerning each student. The investigator felt the service could be of vital value to schools and of great assistance in strengthening home and school relationships (Lynch, 1975: 16).

The preventive aspect of providing parents continuous and personalized access to health and educational services is worthy of emphasis. Early intervention and ongoing parent involvement may well play a major role in the prevention of learning disabilities. Dr. Ray Wunderlich, a pediatrician specializing in assisting children who suffer from learning disorders, notes that physical or health deviations often begin very early in the child's life. The learning disabled child

> . . . commonly has a history of physical disease of one sort or another. This physical illness has often been unrecognized entirely, or it has been unrecognized as being connected with subsequent learning disability. . . . It may not be easy to tell when a health item is the primary cause of poor learning or when it is the manifestation of a more basic underlying problem and merely coexistent with learning disorder. . . . Multidimensional diagnosis is vitally important but means nothing unless followed by programs of therapeutic action which change existing situations (1972:216-217).

This raises issues of the provision of very early health and education services to all parents of young children. A provocative study, "Parental Expectations of a Multidisciplinary Clinic for Children with Developmental Disabilities" (Lipton and Svarstad, 1974:157-166), vividly portrays the plight of parents who find that they have learning disabled children but do not know where to turn. This study sought to understand what parents thought the clinic should and would do to help their children. The results were unanticipated in that the parents were quite uncertain regarding what should happen. Most of them had been referred by the school system, but had received little or no orientation as to what to expect. Sixty percent of the parents had previously turned to their pediatricians, but in every case they had been assured that nothing was wrong with the child and that the child

would outgrow his difficulties. However, in spite of the fact that the professionals had normalized the problem, in all cases the problem persisted and the parents were forced to seek further help.

Every parent wanted to receive some kind of information from the clinic about the nature of their child's problem, and about 30% of the parents wanted to know whether their child had a "real" problem. Sixty-seven percent did not know what kind of specialist might be needed, and 43% wanted to see more than one professional. When asked, "What kind of help do you want for your child?", 85% of the parents expressed some ideas such as: special classes or special schools, psychiatrists or psychologists, speech therapy, or tutoring. However, 71% of these parents expressed reservations about their opinions and were considerably uncertain as to whether or not this was what their child really needed. Over half of the parents expressed a need for themselves to become actively and meaningfully involved in helping to solve their children's problems at home and to participate in the therapeutic process. This study raised a number of questions and showed a need for a support system to help parents understand the problems faced by their children. The authors asked such questions as: How does a parent who is uncertain about the nature of professional procedures judge the adequacy of the evaluation process and the appropriateness of the suggested treatment plan? How do such parents implement treatment unless they thoroughly understand it? Who explains to the child his condition? How does parental uncertainty affect the eventual outcomes of professional-parent interaction? Many such questions will have to be addressed by those who seek to design continuous home-school-community support sys-

tems which encompass educational and health concerns. It appears that any effort to improve the condition of children will require continuous attention to the key roles played by parents.

Habits that have been practiced since childhood are firmly rooted. Indeed, most of them are established long before the child is old enough to fully understand the scientific basis upon which they rest. Thus, the parents' responsibility to wisely and lovingly guide habit formation from the very beginning is profound. Only gradually can they even supply the child with the supporting knowledge upon which his health behaviors are already based. And even then, if any changes are to occur, they will in all likelihood take place under the parents' guidance and supervision. Thus a majority of efforts to improve child health must logically center on parents.

The Anisa Model recognizes the importance of parents' active participation in all aspects of children's development. We, therefore, plan to create programs that will assist parents in enhancing the health, nutrition, and education of their children. We feel such services should be available to all parents.

Since September 1973, some aspects of the Anisa Model have been gradually implemented in the preschools and public school system of a small New England town. The Very Early Anisa Program (VEAP) began in September 1974 and represents the initial stages of what we hope will eventually evolve into a comprehensive support system designed to unite parents and schools into a single, coherent system for the purpose of enhancing children's biological and psychological development. A brief

description of the Very Early Anisa Program, along with several case histories, is given in the Appendices as a practical example of the potential fruitfulness of a comprehensive theoretical approach to furthering the biological and psychological development of families.

This three year pilot pre-research demonstration study, federally funded by Title I, represents a very small first effort to outline an outreach system capable of providing basic health and educational services directly to disadvantaged families that have children ages birth to five. It incorporates many of the features raised above concerning parents' central role in improving their children's biological and psychological status. As almost every family had significant unmet medical and nutritional needs, the health and nutritional components of the program were given as much emphasis as the educational one. The following summary chart of the health and nutritional profiles of the twenty children in the Very Early Anisa Program gives one a vivid picture of the reason why health and nutrition services must play a major role in such programs, particularly among disadvantaged families.

The brief profiles given in the chart convey the clear need for comprehensive programs to address the entire family--parents and children--as an ecological whole and to provide health, nutrition, and social work services as well as educational interventions. For further information concerning the Very Early Anisa Program, please refer to the Appendices. Although this particular pilot project was extremely restricted in resources and focused primarily on a disadvantaged population, its findings will certainly have implications for the creation of similar programs for the general preschool population.

HEALTH AND NUTRITION PROFILES OF THE 20 CHILDREN IN THE VERY EARLY ANISA PROGRAM

Child #	A	B	C	D	E	F	G	H	I	J	K	Additional comments on each child's problems
1				x								Inappropriate aggressive behavior was causing trouble at school.
2	x	x	x					x	x	x	x	On unsupervised drug as medication; obese.
3	x	x	x	x	x	x	x	x	x	x		Entire family had massive health needs.
4			x					x	x			Both parents were alcoholics; child's teeth were blackened by decay.
5												Child insecure due to recent divorce caused by paternal acoholism.
6							x	x		x	x	Extremely disruptive and hyperactive.
7												Child in good health despite exceptionally dirty home.
8	x	x	x				x	x				Child neglect and suspected diabetes.
9	x	x	x	x	x	x	x	x	x	x	x	Child neglect, very poor health, very small for age.
10	x	x	x					x	x	x		Behavior problems: uncooperative and aggressive.
11	x				x	x						Cerebral palsy; retarded; could not speak or walk.
12	x	x	x	x	x		x	x		x		Bizarre personality, suspected psychosis; asthma.
13		x	x		x	x						Hearing impairment caused a speech lag.
14	x		x	x	x	x	x	x		x	x	Very poor attention span was preventing learning.
15	x		x			x		x	x	x	x	Orthopedic needs; was very clumsy and fell down often.
16		x	x	x	x	x	x	x	x	x	x	Severe speech problem and chronic bronchitis.
17		x	x				x					Recurrent inner ear infections and allergies.
18	x	x	x				x	x	x	x	x	Extremely hyperactive; recurrent respiratory infections.
19	x	x	x					x	x			Very poor diet, sleep disturbances and behavior problems.
20	x	x			x	x	x	x	x			Suspected mental retardation and organic brain damage.
Total	12	12	14	6	8	8	9	15	12	10	7	

Code:
- A. Birth Complications
- B. Needed Medical Examination
- C. Needed Dental Care
- D. Needed Learning Disabilities Analysis
- E. Needed Speech Therapy
- F. Needed Hearing Examination
- G. Allergies
- H. General Dietary Problems
- I. Excess Sugar Consumption
- J. Extremely Short Attention Span
- K. Hyperactivity

(further details are given in case histories)

CHAPTER FOUR

SCHOOL RESPONSIBILITIES FOR CHILD HEALTH

A. The Functions of Schools in Promoting Child Health

The primary roles of the school in relation to child health may be broadly conceived as educative and preventive. Health education has always been given lip service as an extremely important function of schools, however it has rarely received the attention it deserves. Horace Mann, the father of the American Public School System, devoted over a hundred pages in one of his books to stress the importance of health education in the school curriculum. In 1843, he wrote that this study

> . . . has claims so superior to every other, and at the same time, is so little regarded or understood by the community, that I shall . . . attempt to vindicate its title to the first rank in our schools, after the elementary [subjects]. . . . I see no way in which this knowledge can be universally or even very extensively diffused over the land, except it be through the medium of our Common Schools (Southworth, 1970:3).

That the paramount importance of health education to the growth and development of children was "little regarded or understood by the community" is apparent in similar appeals made by educators over a century later:

> Our colleges and universities are doing far less than they might to dispel the ignorance that lies at the root of the ill health of many of our people. [It is] a basic and enduring reality of life that knowledge of present, accepted, scientific facts is a determining factor in the protection and promotion of health and should be made a part of the equipment of every

> student . . . what is needed is [courses that deal] specifically and explicitly with the information, attitudes, and habits the student needs to maintain and improve his own health and that of his community. An important phase of instruction to this end will be emphasis on the fact that health is more than a personal problem, that it has social implications, and that the individual owes it to society no less than to himself to keep his health and energy at their peak (Southworth, 1970:5).

The primacy of health education in the overall function of education is reflected in the report of the International Advisory Committee of UNESCO on the School Curriculum, which states that the first objective of primary education is "To stimulate and guide the child's physical development and establish in him sound health habits" (Turner, 1966:4). Another UNESCO report, based on selected aspects of a world survey of parents' assessment of the importance of various subjects in the primary school curriculum, stated that parents considered health education to be more important than any other subject, with the exception of reading, writing, and arithmetic (Turner, 1966:4-5). Parents' judgment of the importance of health education in the schools to their children's development is understandable in light of the great amount of time that children spend in the educational system and in consideration that the teacher is probably the one person, besides the parents, who is with the child long enough each day to guide habit formation (Turner, 1966:110).

In addition to guiding children in the formation of healthful habits and providing safe environments for their growth, schools also serve important preventive functions by the early identification of health problems and their prompt referral to corrective services. Schools thus constitute a natural entry to primary care level health

services.

> Schools, as social institutions that significantly shape the development of all human beings in modern society, are potentially ideal settings for preventive interventions . . . . It is sure that no matter how a school is set up, it is an institution that profoundly influences child development. The choice we face is whether that influence is to be random or informed. . . . By proverbial wisdom and common sense, prevention of disability is greatly to be preferred to treatment and rehabilitation (Cowen, 1971:723-732).

B. Teacher Training as It Relates to Child Health

The World Health Organization has recognized that much of our health efforts must be directed to children and to the institutions responsible for their development. The Expert Committee on School Health Services has emphasized that teachers are key figures in all health services:

> The role outlined for the teacher is obviously important and fundamental in any health service. In areas with extremely limited health services, the teacher may be one of the few persons in the community, besides the parents, interested in the child's health. While a program which depends on the teacher to carry the whole burden cannot be as productive as one with a nurse and physician, there is obviously much that can be done. Conversely, in a highly developed service, the role of the teacher, while no longer unique, is still as important to the child's welfare as ever, and there is no substitute for the knowledge gained from the teacher's continued classroom observation. . . . Information . . . which is often essential in understanding the child's problem, and which would not be available to the medical staff from any other source . . . it is of great importance that the results of any medical action regarding the health of the child, whether or not it is stimulated by the teacher's observations, should be reported back to the teacher in lay terms and with a clear statement as to future plans or significance (WHO, 1951:20).

In the 1930s in the United States, a careful pediatric study of 500 children was carried out to determine whether or not teachers could be reliable observers of children's health status, given brief and simple

training in the common signs of health and illness among school age children. Each child was examined by a physician when he entered school, and thereafter only when referred by his teacher for further medical attention. It was found that 8 out of 10 children referred by teachers as needing medical attention actually did have valid reasons to be seen by a nurse or physician. Moreover, there were no previously undetected health problems discovered among those children who had not been selected by their teachers for medical examination. The authors felt that teachers were able to perform a real service for the children by calling attention to health problems which may otherwise have been unrecognized and neglected. They also felt that training teachers in the basics of health observation and health appraisal of school children assumed added significance in view of the current shortages of medical manpower (Wheatley, 1970:110-115).

The Anisa Model affirms the unique position of teachers in the promotion of child health and thus supplies them with accurate and applicable health and nutrition information as an integral part of their pre- and in-service teacher training. Many, if not most, teachers have little or no background in the biological sciences, much less in health or nutrition. Research has shown that these teachers harbor many more misconceptions about health and disease than do teachers who have some health background (Willgoose, 1971:10). The following discussion touches upon areas which the Anisa Model feels to be important to all classroom teachers and thus includes in their basic training.

As Whitehead has observed, "in teaching you will come to grief as soon as you forget that your pupils have bodies" (1967a:50). Teachers

therefore need an understanding of biological integrity as a fundamental prerequisite to sound psychological development. Their preparation should include a careful study of the relationship between biological and psychological potentialities: psychomotor, perceptual, cognitive, affective, and volitional (especially attention). Were one to devise a taxonomy of learning disabilities and behavior problems, one would find biological underpinnings involved in a considerable percentage of the cases. Thus, an overview of children's health problems and their incidence in the United States may also be of considerable value to classroom teachers. Much of the material presented in the first two chapters and in section E of Chapter III could provide teachers with an introductory background to the direct bearing that biological integrity has upon educational undertakings. Thus, teachers could understand why the biological base of learning is of primary concern to them and why educators must first insure that the children's bodies are in proper working order before attempting to teach them anything.

Teachers need to know how to recognize health problems in the classroom and when and where to refer them. Since teachers currently initiate 50% of children's visits to school nurses, one may assume that they do recognize and refer certain health problems. However, one wonders about the other half of the visits, initiated by children (50%), nurses (20%), and other staff members of parents (30%) (Hilmar and McAtee, 1973:432). Are teachers not aware of these problems or are they merely insignificant ones? Many pediatricians suspect an "iceberg" of undiagnosed and untreated conditions among children, conditions that frequently contribute to learning disorders (Pless, 1976:37-46). Train-

ing teachers in the elementary aspects of health appraisal and identifying disorders could bring many of these conditions to light in their earlier stages and enable prompt referral to corrective services. In addition, studies indicate that teachers should receive adequate training in first aid and in the management of minor health problems because medical personnel are often not available immediately (Turner, 1966:60). In light of the fact that parents usually handle 80% of children's health complaints, some programs have encouraged and equipped teachers to manage minor emergencies in the classroom without calling upon medical personnel (Lamb and Richmond, 1976:50). Such approaches follow the principle that "health intervention should be undertaken at the most peripheral level practicable by the worker most simply trained for this activity" (WHO, 1975:2). The above examples suggest several areas in which regular classroom teachers could be of service in improving children's health status. A myriad of other examples could be cited, including daily morning health reviews, home visits, frequent consultation with parents, and a wide variety of environmental concerns such as lighting, ventilation, temperature, cleanliness, sound control, shelters, traffic patterns, safe materials, and comfortable furniture that accommodates postural options. Teachers also need to be aware of the role of the human environment in promoting wellbeing, for example: the emotional atmosphere, the sense of purpose and order, the maintenance of groundrules, and the sense of community. They must be particularly mindful of their role as models of healthful living; not to mention the personal stamina and long, hard hours their work demands, requiring strength and health. Furthermore, they must be prepared to teach health.

> Health education can influence the lives of people for many generations. . . . [It] should be a specific and integral part of all aspects of school life and all branches of teaching. . . . It must be emphasized that most lasting improvements in public and individual health will come through changing attitudes and developing understanding--in short, through education (WHO, 1958:9, 37; WHO, 1951:7).

The function of health education in the primary grades is to teach children the correct information, attitudes, and habits that will comprise the foundation of their lifelong health practices. Parents and teachers clearly must work together in providing children with consistent examples, information, and expectations concerning health behaviors. This is one area (of many) in which it is of vital importance that the institutions of home and school not work at cross purposes. The parent and family life program would play a key role in helping the parents with the children's earliest health education experiences, a process that would continue throughout the children's school years.

Although it is beyond the scope of this dissertation to give a detailed presentation of the comprehensive health curriculum envisioned by the Anisa Model, let us consider one health related learning experience in light of its multiple process and content objectives to see how health education can be integrated into the school curriculum and can fulfill general educational goals. For young children, a large portion of the Anisa nutrition education program centers around snack. The children are introduced to wide varieties of high quality foods: fruits, vegetables, grains, meats, fish, and dairy products. Every day they participate in the preparation, serving, sampling, and discussion of these nutritious foods: making soup, salads, juices, casseroles, and baked goods in the classroom. Teachers, parents, and cafeteria staff report

that this daily snack program helps to develop positive eating attitudes and habits: the children make more knowledgeable food choices, are more willing to try new foods, and eat more well-balanced meals. They also become competent and eager to help in the preparation, serving, and clean up of meals. The moral aspects of snack--table manners, cooperation, sharing, taking turns, and engaging in polite conversation--are stressed. Suggestions of ways that processes might be strengthened in the five categories of psychological potentialities are as follows:

Psychomotor: Gross and fine motor coordination, including the manipulation of foods and handling of utensils, chopping, mixing, stirring, squeezing, and pouring.

Perceptual: Using the five senses to learn about colors, textures, smells, tastes, shapes, weights, and moisture.

Cognitive: Learning classification, for example, by grouping fruits or vegetables; conservation, by observing an apple maintaining its distinctive taste throughout changes in form, i.e., juice, pie, and applesauce.

Volitional: Setting goals and pursuing tasks to completion, i.e., preparing fruits into a salad before eating them; this includes self-control, attention, perseverance, and delayed gratification.

Affective: Food always has emotional connotations: likes, dislikes, and criteria for acceptance of new and unfamiliar foods are related to this. The emotional atmosphere within the group at mealtimes is also of great importance.

There are also clear correlations of the snack program with other academic areas; for example,

Arithmetic: Measuring ingredients, computing fractions, and dividing food equally among people.

Language: Learning the vocabulary and spelling of food names.

Reading: Reading recipes, packages, and ingredients.

Science: The relationship of diet to health, the basic chemistry involved in food transformations, and the elementary technology involved in kitchen machines.

Social Studies: The uses of food in various cultures, the development of agriculture, and the types of professionals involved in bringing food to the supermarkets.

Thus, one can see how the single experience of snack relates to the general educational process and content goals and is of immediate practical value to the children. Nutrition can be seen as one fundamental form of environmental interaction that affects children's development in many ways from conception on. Many parents feel that this aspect of the Anisa program has an immediate impact on their daily lives; it produces significant positive changes in their children's eating habits. A similar practical and integrative approach applies to the teaching of other aspects of health, including accident prevention, safety, first aid, dental care, and so on.

C. Public Schools and Primary Health Services

As the need for major transformations in both the health and educational systems becomes increasingly evident, many communities are considering the integration of human services through the public school system (although not all services would necessarily be delivered at the same site). The exploration of new structures for the delivery of health and other services to children and their families is largely in response to two interrelated problems: the current training, distribution, and use of health manpower militates against the formation of sufficiently coordinated services to meet basic and diverse health care needs; and in spite of escalating costs, a large percentage of Americans still do not have adequate access to continuous primary and preventive health services (Mahoney, 1973:124).

Not only are today's primary physicians, as presently organized and distributed, unable to meet the primary care needs of the nation, but the gap seems to be widening. The ratio of primary physicians to the general population is decreasing; it dropped from 1:1060 in 1931 to 1:2430 in 1971 (Parker, 1974:36). The ratio of child health physicians to children shows a similar decline (Silver and Hecker, 1970:172). Although the above observations may be qualified by questions as to the needs of the population, the patterns of specialist usage, and the substitution of other health workers, it is generally recognized that there is a substantial need for more and better primary care services (Parker, 1974:15-77).

Evidence suggests that the need for primary care services might

best be met not by massive increases in physicians, but rather by training paraprofessionals to carry out specific health and supportive human service functions. The World Health Organization (1975:2) has observed that all health interventions are best undertaken at the most peripheral level practicable by the worker most simply trained for that specific activity, with other echelons of the health services designed in support of that practitioner, ready to furnish technical help, referral facilities, consultation, and supervision. They emphasize that the most important principle of all in primary health care is that it must be fully integrated with all sectors involved in community development, particularly education. The following discussion will consider new ways in which schools might serve to improve the health status of children by the early identification of problems, the provision of supportive services, and the coordination and followup of all health and educational care.

The school may well be in a unique position to orchestrate primary health services. Parker writes:

> Widely varying physical, psychosocial, and environmental causative factors are at work in many health conditions. Even common conditions, while they may be uncomplicated, are also extremely diverse. . . . A large number of health conditions require a close and trusting relationship between the family, the community, and the health care organization to effect appropriate utilization, to collect an adequate and relevant data base about factors influencing the patient's health condition, and to be in a position to help in the alteration of causative and environmental factors (1974:21-22).

Parker further cites attributes of a primary health care system, qualities that may also be found in local schools. It:

- Serves a small population;
- Is physically close to the community;

- Provides a generalized, holistic response;
- Is easily identifiable and quickly responsive;
- Is able to sort out problems needing referral to the next level of care;
- Is continuous in its attention;
- Coordinates all facets of care;
- Calls for simple approaches; and
- Is trusted by the community and its people (1974:22).

Parker further observes that:

> Education is fundamental at the primary level where the focus is on total needs, and where preventive and promotional activities depend almost exclusively on education in order to change behavior (1974:25).

In a recent article entitled, "Redesigning Family Health Care Services," Drs. Lamb and Richmond (1976:45-51) offer many viable suggestions as to the ways that schools can provide health services within a public system where all children and parents have easy and continuous access to them. They note that health professionals have traditionally provided little information to parents concerning early childhood education, cognitive growth, and the many everyday problems that confront today's families. They feel that multidisciplinary teams, operating out of schools (since schools are conveniently already in place, are mandatory for all children, and are currently the major neighborhood institutions), could provide parents with assistance in raising their children from birth. Thus the health and education services of the public schools would be integrated with the parent and family life program discussed in the previous chapter.

They point out that parents should become informed in basic health management because approximately 80% of children's health complaints are presently handled by parents, with varying degrees of effectiveness. For example, when a medication is prescribed for children,

parents only give their children the medication in 60% or 70% of the cases. A careful investigation of this problem found that if a paraprofessional such as a pediatric nurse practitioner followed up the physician's medical recommendation with a consultation with the parents to assure that they had a practical understanding of the child's condition and of the prescribed treatment, the total effectiveness of medical care rose from 60% to 90%. The parents' understanding, compliance, and effectiveness in applying the treatments also rose from 60% to 90%. The investigators concluded that medical effectiveness could be greatly enhanced by having a single individual--in this case, a pediatric nurse practitioner--assume responsibility for following through with each family (Fink, 1969:527-533).

In an effort to improve primary health care services, nearly 85 programs to train non-MD health care practitioners were put into effect by 1973 (Mahoney, 1973:128). At the forefront of this movement, and perhaps most relevant to programs of school health, is the pediatric nurse practitioner program instituted by Henry K. Silver and coworkers at the University of Colorado Medical Center ten years ago (Silver and Hecker, 1970:171-176). This program prepared registered nurses to assume an expanded role in providing comprehensive health services to children under the close supervision of pediatricians. They receive approximately four months of intensive theory and practice in pediatrics, during which time they learn to take complete histories; perform comprehensive physical examinations; carry out necessary immunizations; evaluate hearing, speech, and vision; determine developmental levels; perform laboratory tests; evaluate and manage common

problems of healthy children and those with minor illnesses; assist in managing emergencies; care for newborn infants and mothers; develop proficiency in counseling parents in child rearing practices and in working with young children; and obtain a grasp of the essentials of child nutrition (Silver, 1971:62-65). Special emphasis is placed on the importance of personal responsibility for follow-up and continuity of care, liaison with other para-medical personnel; counseling parents, including giving advice over the telephone; and performing educational and developmental screening on children.

Studies of the competence of pediatric nurse practitioners showed that their diagnostic abilities differed from those of practicing pediatricians in less than 2% of the cases, a variation as likely to appear among different doctors (Mahoney, 1973:130). A survey of the effectiveness of the pediatric nurse practitioner in an urban neighborhood health station where a physician was present only one-half day each week indicated that 71% of the children could be cared for by the nurse alone, while 11% were cared for by her in consultation with the physician by telephone. In less than one-fifth of the visits was it necessary for the nurse to refer the child to a physician, specialist, or hospital for further care (Silver and Hecker, 1970:173). Acceptance of pediatric nurse practitioners in private practice has also been remarkably good. One survey showed a high degree of parent satisfaction with the combined care provided jointly by a private pediatrician and a nurse practitioner. Ninety-four percent of the parents expressed satisfaction with this form of joint services; while more than half of them stated that the care given jointly by the nurse and the pediatrician

was better than that they had received from the pediatrician alone (Silver and Hecker, 1970:173). One reason for the parents' increased satisfaction with this arrangement is explained as follows:

> When a patient is seen by both a physician and pediatric nurse practitioner, the mother has a greater opportunity to ask questions and to discuss a variety of problems that may have been bothering her. Mothers frequently will discuss things with the nurse which they may have considered to be too trivial to bring to the attention of the physician. When the nurse spends a relatively long and uninterrupted period of time with the mother [35-40 minutes], the latter will frequently become quite communicative and participate in a much more meaningful discussion. This, in turn, has resulted in earlier recognition and more effective management of behavior problems that are already present or . . . in the initiation of measures to prevent their development (Schiff, 1969:66).

Because the nurse sees the child first, makes an initial assessment of his health status, and thoroughly discusses his growth and development with the parent before meeting with the pediatrician, 30 to 50% of the pediatrician's time is thereby freed (Silver and Hecker, 1970: 174). He could thus conceivably serve up to twice as many children. Surveys carried out by the American Academy of Pediatrics on the utilization of allied health workers found that 80% of pediatricians felt that greater use of allied health workers would improve the quality and/or quantity of health care (Schiff, 1969:67). Moreover, the majority of pediatricians said they would hire such workers, were they available (Silver, 1970:174).

Because of the competence, effectiveness, and acceptance of the pediatric nurse practitioners, their role in providing child health services and particularly in working closely with the parents will very likely grow and evolve to occupy a central position in the overall picture of provision of health care services for children. Dr. Parker

(1974:44-45) observes that such mid-level workers as nurse practitioners and physicians' assistants will probably have profound effects on primary care, particularly when integrated into a cohesive and coordinated team approach. She further remarks that although the extent of "substitutability" of physicians by such practitioners is as yet unknown, in remote areas, under supervision, they are now successfully assuming almost the entire primary care load.

Although the long-term impact of pediatric nurse practitioners remains to be seen because they are such a relatively recent development, and although they require supervision from a licensed physician for legal as well as medical reasons, they are probably the most effective means of providing the amount of health care required to meet the needs of children in this country in the near future (Silver and Hecker, 1970:174).

For example, a study of the relative effectiveness of a school nurse practitioner (SNP) as compared with a traditional school nurse (SN) demonstrated that there could be a substantial expansion of the school nurse's traditional health care functions and responsibilities, were she equipped with the specific skills of the practitioners in addition to her regular nursing skills (Hilmar and McAtee, 1973:431-441). This study surveyed 16 elementary schools, half of which had conventional school nurses and half of which had nurse practitioners. The most common initiators of visits to the nurse were teachers, 50%; pupils, 27%; and nurses, 10% (who took initiative in seeking out pupils who needed health care by means of a deliberate out-reach process).

Various kinds of emergencies prompted more than half of the

pupil visits to the nurses: acute illness accounted for 32% and accidents accounted for 26% of the visits. The remainder of the visits were for the following reasons: general health evaluation, 11%; chronic illness, 10%; behavior problems, 10%; and learning problems, 6%. The findings suggested that SNP's were able to manage many more health problems at school than were the SN's. While the volume of pupil visits to SNP's and SN's were approximately the same, the SN's refer twice as many pupils to physicians (44% vs. 23%) and four times as many back to teachers (20% vs. 5%) for further evaluation than did the SNP's. The SN's also sent twice as many pupils home from school than did the SNP's. Counseling and education of children and parents were the most common activities reported by both SN's and SNP's.

When children were sent home, the investigators tried to contact their parents by phone or by mail to obtain parental interpretations of the child's health status, parent recall and comprehension of the nurse's recommendations, and the subsequent decisions made by the parents regarding the care of their child. Parents had accepted the SNP's advice in 91% of the cases but had accepted the SN's advice in only 73% of the cases. They were also better able to retain and recall the SNP's advice than the advice from the SN's. In about 16% of the cases of pupils sent home by SN's, the parents expressed uncertainty about what they were to do next. Such indecision was not expressed by any parents of pupils sent home by SNP's, reflecting the importance of the communication process between nurses and parents not only as a form of reassurance and support, but also as a definitive step in marshalling the parents' informed participation in the child's health

regimen. It appears that SNP's gave parents more clear and specific recommendations for management of the children's health problems than did the SN's.

This study suggests several areas in which school health services might be strengthened with relatively little effort. Nurses might receive more training in the management of acute conditions (illnesses and accidents), in understanding learning disabilities and behavior disorders, and in providing clear consultation to parents. Because education and counseling of children and parents consumes such a large portion of the nurses' time, they must receive extensive teacher training pertaining both to adults and to children.

As American educators come to realize the magnitude of child health problems in this country, particularly in light of the negative effect of impaired biological integrity upon children's learning abilities, one can expect schools to become increasingly involved in forming programs and interdisciplinary professional teams to deal with these problems. Such teams might be composed of medical personnel, social workers, nutritionists, psychologists, learning disabilities specialists, home-school liaisons to involve parents, and educators, especially regular classroom teachers. In light of the fact that approximately 30% of the children in this country do not have access to primary health care (Lamb and Richmond, 1976:45), that roughly 30% of all children have mild to severe school maladaptation problems (Cowen, 1971:724), and that about 10% of children have chronic illnesses requiring skillful biological and psychological management (Pless, 1976:37-46), it is understandable why the White House Conference on Children emphasized that:

> Teachers should have easy access to early consultation with psychologists, social workers, pediatricians, and child psychiatrists for some of the developmental problems confronting them in the classroom . . . [we] must acknowledge a commitment to the child's basic right to health as well as to education and other services that will enable him to achieve his full potential [emphasis mine] (1970:174, 201).

CHAPTER FIVE

IN THE CHILDREN'S BEST INTEREST

Largely as a result of improved nutrition, sanitation, immunization, and antibiotics, mortality rates for young American children have declined by more than 95% since 1900 (U.S. Health, 1975:340). Life expectancy at birth has increased from 47 years in 1900 to 70 years in 1964. That these improvements may be largely attributed to better infant and child health care may be seen if one measures life expectancy beginning at age 40: in 1900, a 40-year old white male had 28 more years of life ahead of him; in 1964, only 32 more years--little progress indeed! Such a minor increment in adult life expectancy leads one to believe that there is considerable room for improvement in the American way of life in terms of health, for adults as well as for children (Kotin, 1974:783).

The vulnerability of infants and young children is unquestioned. The risk of death for infants (under one year of age) is higher than for any other age group under 65 (Profiles of Children, 1970:50). Children ages 1-4 suffer twice as many deaths as children ages 5-14, including twice as many fatal accidents and homicides, and four times as many deaths due to influenza and pneumonia (U.S. Health, 1975:359-361). These statistics show why health planning priorities must focus upon the very young and their parents.

Children exposed to poverty and racial discrimination also

compose a substantial high risk population. Taking the American Indians as an example, they are markedly economically disadvantaged in comparison with other ethnic groups: their average annual family income is approximately $2,000, in contrast to white families' $10,000 and black families' $6,000. Over 20% of all deaths among American Indians are infants and children, in contrast to 6% among the U.S. population as a whole. There are ten times as many deaths due to tuberculosis among American Indian children (under 15) than among American children in general. These few statistics serve to illustrate the increased health needs of children at risk due to poverty and prejudice (Wallace, 1973:449-454).

Indeed, it would not be difficult to build a case for the existence of widespread discrimination against children, a phenomenon that may have been with us from time immemorial. For example, Edward Shorter, in his book, The Making of the Modern Family (1975:168-190) cites grisly accounts of the 18th century European practice of boarding infants out to mercenary wet-nurses. He comments,

> Had these mothers actually traveled to whatever dark hole their child had fallen into, they would have been stunned. The wet nurses, drawn from the agricultural laborers, marginal peasants, and unwed mothers (who often got pregnant in order to lactate and thus market themselves) were desperately poor, harried creatures who generally lived in rural hovels . . . the terrible poverty that had motivated the rural family to take on a nursling in the first place created an environment that was in every way inhospitable to good mothering and even to physical survival (pp. 178-179).

He further notes that it is not surprising that the mortality rate of these children was at least 50%, several times higher than that of their peers who had not been sent away from their families to rural wet

nurses (pp. 181-186). His portrayal of 18th century France rings true in comparison with the following conversation between a pastor and a local school master of that period, gleaned from a different source:

> What do you teach the children?
> Nothing, sir.
> Nothing? How is that?
> Because I know nothing myself.
> Why, then are you instituted school master?
> Why, sir, I had been taking care of the . . . pigs for a great number of years, and when I got too old and infirm for that employment, they sent me here to take care of the children (Hewes, 1975:37).

That many present day readers will immediately recognize this disasterous attitude toward children as a familiar phenomenon is indicative of the longstanding need for a fundamental transformation in society's entire orientation toward children. Even today, with our increased appreciation of the importance of early childhood, caring for children is commonly regarded as a dull, low status, custodial occupation. This historical prejudice against children, if you will, is manifested in innumerable ways in American culture: from the extensive unmet needs in child health, to the low social status and poor salaries of teachers of young children, to the use of such terms as "baby sitting," which certainly fails to reflect a commitment to prepare a child fully for his destiny.

The Congressionally appointed Joint Commission on Mental Health of Children stated that

> . . . this nation, the richest of all world powers, has no unified national commitment to its children and youth. The claim that we are a child-centered society . . . is a myth. Our words are made meaningless by our actions (1970:2).

The United States is the only modern industrialized nation that

does not insure health services for every family with young children, and particularly for expectant mothers and infants (Bronfenbrenner, 1976:64). The implications of providing such services on a nationwide, public basis are, no doubt, enormous: expenditures for health care in the United States have increased dramatically in the past twenty-five years. They have risen from $12 billion in 1950 to $119 billion in 1975, or from $78 to $547 per capita (U.S. Budget, 1977:193). And yet, health system planners estimate that the adoption of a national health insurance program will further increase the health care delivery load by 30 to 60% (Colling, 1976:3).

This predicted increase in demand for health care services by 30 to 60%, in the event of the implementation of a national health insurance program, is one "tip of the iceberg" type of indicator of the massive unmet health needs in this nation. We know, for example, that the needs of approximately 60% of the children requiring special education for a wide variety of health and related reasons (speech impairment, mental retardation, emotional disorders, hearing and vision impairments, and physical handicaps) are not being met by current programs and are unlikely to be met in the near future (U.S. Health, 1975: 389; Schwartz, 1975:2-6). How can these children be expected to learn if their health problems, already recognized, are left unsolved? How many more children must there be whose health conditions have yet to be identified, must less resolved? These questions are raised because we know beyond a doubt that

> Health is a significant variable . . . in the learning potential of the child. . . . It would be disastrous if we were either to ignore or to relegate the physical condition and health

> status of the child to a place of unimportance. To do so would be to divorce education from health; a divorce which can only have disorganizing consequences for the child. Unless health and education go hand in hand we shall fail to break the twin curse of ignorance and poverty (Birch, 1968:599).

Much work remains to be done on many dimensions to determine the best means of problem prevention and health promotion; nevertheless, we have ample information on hand to begin systematic programs to greatly enhance child health. Today's young children will be reaching their prime in the year 2000. What can be done to "get ahead" of their health problems by prevention? Could we not elaborate a comprehensive overview of current health problems, analyze this diagnosis, select the highest priorities, delineate possible courses of action, and design and implement pilot programs to determine the most effective points of intervention? It is clear that there are a complex of interrelated issues that will need to be dealt with on all sociological levels: global, national, local, community, and family. Each of these issues will have to be addressed by a coherent, intelligent plan of action involving several major institutions, including government, industries, schools, and families. The need for an overarching plan with a clear sense of purpose is readily apparent, considering the following example of the questionable way in which our society currently arranges its priorities. Each year, the federal government spends less than one million dollars on educational campaigns to inform the public of the dangers of smoking. At the same time, in spite of its declared "war" on cancer, it spends over 50 million dollars a year in subsidies for tobacco growers. It also permits cigarette manufacturers to spend over 250 million dollars a year on advertising alone--an amount more

than one-third of the entire federal budget for cancer research (Gonzalez, 1976:33). How will the cycle be broken to spare children of this universally recognized health hazard?

According to the Constitution of the World Health Organization: "Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures [emphasis mine]" (1960:1). It seems inescapable that our government must set, support, and enforce far higher standards for the protection and promotion of the health of the public. This is particularly crucial in child health as, "there is no reason to believe that preventive services, so essential to the health of children, can be entrusted to private incentives" (Miller, 1975:356). It is clear that vast financial and human resources will have to be mobilized in order to uplift children the world over from their present condition to one wherein they will be enabled to make their fullest contribution to the advancement of civilization. The magnitude of unmet needs on the part of families--parents and children alike--is immense. "What we hope for is a change in the national penchant for, in the words of Senator Mondale, 'authorizing dreams and appropriating peanuts'"(Birch and Gussow, 1970:XIII). What we hope for is an enlightened national and international commitment to the best interests of children, and thus to the future of mankind. Were such a commitment to be forthcoming, what could be done to reverse the destructive trends that are presently threatening the quality of children's lives? What intervention points would render the greatest leverage in reversing these trends? Clearly, the institutions responsible for the formative years of children's

lives, the family and the school, must be the focal point of all efforts to uplift children from their present state to a superior level of the finest possible biological and psychological functioning. How can this be done? We envision the emergence of international development centers whose explicit purpose is to apply the best of health and educational science directly to the transformation of families and schools. The efficacy of this approach on the individual level has been proven; now the time has come to apply it to entire institutions. Without first transforming the fundamental institutions upon which children's wellbeing depends, one cannot expect to reverse current trends or to improve the fate of children. We have the capability not merely to reverse the downward trends but to raise the quality of children's lives to unimaginable heights. Imagine the horizons that would open to mankind were all currently available knowledge about human growth and development brought to life in the home, school, and community of every child. All that is lacking is the will to mobilize our resources for this purpose.

APPENDIX ONE

THE VERY EARLY ANISA PROGRAM--A BRIEF DESCRIPTION

Over fifteen years of research, planning, and experimentation have been invested in laying the conceptual foundations of the Anisa Model, a comprehensive plan for educational renewal. Since 1973, selected aspects of the Model have been implemented in a few public schools, preschools, and private child development centers in several states: Massachusetts, Maine, Connecticut, Missouri, and Ohio. Although these pilot projects have centered on teacher preparation and the formal school program, we have recognized the importance of active parent involvement in enhancing children's health, nutrition, and educational progress.

We therefore sought federal funds to launch a small, "in-house," pre-research demonstration study to determine the broad outline and general approach of a parent and family life program whose purpose would be to assist families to promote their children's health and development. Since September 1974, we have received approximately $9,000 per year from Title I Federal Funds to provide basic health, nutritional, and educational services to twenty disadvantaged families, all of whom have children ages birth to five. This project is known as the Very Early Anisa Program (VEAP). We felt that such a modest outreach program would not only assist the families to improve their children's health and educational prospects, but that it would also give us the opportunity to identify and address the key issues inherent in the design of such a comprehensive delivery system.

Because of the exploratory nature of the study, we assessed the

needs of each family, chose specific objectives to pursue in each case, and documented behavior changes in a systematic case study format. Although this method of evaluating program impact had limitations and was perhaps less desirable than a long range, empirical control group design; it was chosen as the most appropriate format in this instance because of financial and time constraints and because the program was intended to be an "in-house" feasibility study rather than a public demonstration "show piece."

The major functions of the Very Early Anisa Program were to provide:

a. Regular home visits during which a developmental specialist (home teacher) provided:
    1. Information to and consultation with parents on child health, nutrition, and development.
    2. Educational evaluation of the children and prescription of specific educational goals according to assessed needs.
    3. Individualized learning experiences and a development curriculum for the children in the five areas of psychological potentialities: psychomotor, perceptual, cognitive, affective, and volitional.
    4. A lending library of learning materials: toys, books, records, games, and pamphlets for children and parents.
    5. Teacher training experiences for the parents demonstrating specific activities and ways of interacting with their children to enhance development, including modeling and daily

homework assignments.

b. Referrals to health services and other social agencies for assistance with multiple problems. A school social worker also made regular home visits for consultation, to arrange referrals, and to do family and developmental histories.

The overriding aim of the educational aspect of the program was to help parents increase their competence as their children's first and foremost teachers and thereby to enhance the children's psychological growth. Every visit, specific educational objectives were set, to be fulfilled by parents and children completing daily homework assignments together.

A list of typical, general educational goals follows (adapted from Home Start, 1974:15):*

1. To help parents realize that they are their children's major teachers and to assist them to fulfill this function by improving their understanding of early childhood education and helping them help their children to be better prepared for school in terms of basic concepts and general knowledge.
2. To praise and encourage the positive ways parents relate to their children and to help them to reinforce their children's positive behavior.

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*In our review of the research on early intervention programs, we found Home Start's Guide for Planning and Operating Home-Based Child Development Programs to be the most useful document in outlining general goals. However, specific goals for each child and each family only emerged as we came to know their unique needs and to consider their biological and psychological variables in light of the Anisa theory.

3. To make parents aware of how to make the most of everyday living experiences and to utilize them fully as learning experiences, for example, by helping parents understand what they are teaching as they involve their children in planting a garden, repairing a car, baking bread, etc.
4. To increase the ability of parents and children to use their own existing resources (time, money, space, energy) to the best advantage, for example, by making maximum use of materials already in the home that can be used for toys and learning games.

Examples of general health and nutrition goals that were applicable to all families follow (adapted from Home Start, 1974:19, 74-75):

1. To ensure that all children have the benefit of regular, comprehensive health examinations.
2. To identify the special health problems of children and their families. To discuss with the parents any health problems or needs that should be receiving attention, and to work out plans of action with them.
3. To introduce the families to community health resources and services, such as the well-baby clinic, and to help them to obtain needed services.
4. To support and reinforce the families in following through in regard to continuing treatments and services needed; making sure that follow-up and continuing care is obtained and is provided to the parents' satisfaction.

5. To provide health education, through materials and discussions, for the benefit of all members of the families being served. This one goal was almost a component in itself, as during each home visit, parents received health information covering various aspects of family health maintenance: accident prevention, immunization, dental care, home nursing, etc. The long-range goal was to help the families become more self-sufficient in maintaining good health. (Appendix Five is a list of health education articles and pamphlets.)
6. To assess with parents the nutritional needs of each family member, and provide advice, information, and assistance to improve the nutritional status of the family. This goal also received considerable attention as the majority of the families and especially the children were found to have inappropriate diets. The most common problems were a lack of good balanced foods and sufficient protein and an excess of "junk" foods and sugar. Again, at each home visit, parents received and discussed nutrition pamphlets, articles, and/or recipes. They enjoyed this part of the program and contributed numerous articles and recipes. (Appendix Five is a list of nutrition education materials.)

Detailed developmental, health, and nutrition information was gathered from each family by means of interviews and written surveys, including medical histories, developmental histories, pregnancy and birth histories, nutrition surveys, educational environment and experi-

ence inventories, etc. (Appendix Five is a list of survey forms.) This information enabled us to identify many problems that might otherwise have gone unnoticed and to seek solutions to them.

The local well-baby clinic provided free medical examinations, immunizations, assistance in diagnosing general health conditions, and referral to specialists. The State Health Department sponsored free prophylactic dental services and vision and hearing screening. The public school system provided speech and learning disabilities diagnosis and remedial services.

The social worker found, not surprisingly, that most of the families faced a number of complex and serious social problems. Four of the children were illegitimate, and six were unwanted (as described by their parents). Ten of the families had major marital difficulties: either they were divorced, seriously considering divorce, or recently remarried. At least five families had problems of severe alcoholism, in some cases on the part of both parents. Many families also had teenage siblings who had numerous social problems. This brief list of family problems suffices to show the need for a social work component, including access to a referral system linking a wide variety of social service agencies: personal, marital, legal, and economic counseling; alcoholic and mental health organizations; financial and legal aid; and school specialists for children and youth. All twenty families required the social worker's services and most of them required further referrals which were arranged and followed up by the social worker.

Several case histories are presented below with the intention of illustrating the potential impact of a very early intervention pro-

gram that places equal emphasis on education, health and nutrition, and social work services. In selecting eight out of twenty case histories for brevity, we chose a representative sample of a few successful, a few moderately helpful, and a few relatively ineffective interventions to give an honest and realistic impression of the impact of the program on various families. Each family had a unique constellation of strengths as well as challenges. Some responded to very simple and straightforward interventions, whereas others required lengthy and complicated referrals Each case history will be preceded by a brief introduction. It is hoped that the style of the case histories will convey to the reader a sense of the child's family experience and home atmosphere.

These histories were originally intended as working notes and day to day logs to be used as references for staff members and associated professionals who were called upon to assist in serving the families' special needs; thus their tone is often informal and conversational. However, one will notice that specific objectives are set forth for each family, often involving a multidisciplinary plan of action requiring collaboration between the immediate VEAP team (comprised of the developmental specialist-home teacher and the school social worker) and related professionals, including school teachers, speech therapists, learning disabilities specialists, doctors, public health nurses, dentists, and various social service counselors.

A more thorough documentation is in process that follows each child's educational progress for several years and includes standardized test scores, report cards, class standings, teachers' comments, etc. It also compares each child's growth against its own previous condition

(in a before and after fashion) and against siblings' school records. If funding permits, it will analyze VEAP children's records in comparison to a control group of similarly disadvantaged children from a neighboring town. In addition, it will contain a detailed set of the social worker's records, including family histories, identification of family problems (of parents, siblings, and VEAP children), suggested referrals and their results, and a summary of the strategies and effects of all of the social worker's interventions, many of which are barely touched upon in the following accounts.

Thus, the case histories are offered here primarily to provide a practical example of many of the issues raised throughout the dissertation, with particular emphasis on the need for support systems to help parents and schools work together to enhance children's development and health.

A P P E N D I X T W O

CASE HISTORIES FROM THE VERY EARLY ANISA PROGRAM

Child A, Age 4

The first case history concerns a four year old child who was on unsupervised medication that interfered with her growth and development. Through the removal of the drug, the improvement of her diet, and the institution of a daily study session in the home, the parents were able to support this child's psychological and physiological development in a way that had not been previously possible. The early intervention very likely prevented more grave problems from arising.

The family's involvement in the Very Early Anisa Program was through several public meetings, five home visits, and numerous telephone conversations (at least ten). The major needs and goals with this child centered around health and her attention span. On the first home visit, I observed that A. was watching television when we arrived, sitting within a foot of the TV screen. I asked the mother if she was on any kind of medication, and the mother replied yes, that she had been on phenobarbital two or three times a day since infancy. When A. was four months old and had high fevers, she would go into convulsions. A doctor prescribed phenobarbital at that time for that reason. He had told the family that she would probably need the medication until she was five or six years old. That doctor had moved out of town and the mother had been renewing the prescription for over two years without any medical supervision. The mother questioned whether

the drug made the child hyperactive and affected her attention span, as she had noticed this in the beginning when the child was originally put on the medication. But at this time she did not know whether those problems were caused by the drug or by personality changes, since it had been such a long time. The mother said there were generally negative behavior changes, but she did not know which were due to drugs and which were due to personality changes. This was understandable because A.'s energy levels ranged from dull sullenness with vacant eyes to hyperactive spurts during which she could not pay attention to anything.

Confronted with the above health considerations, we recommended that the mother take A. to a physician at the earliest convenient time to see if she could discontinue the phenobarbital. She did this promptly and was able to have the child taken off the phenobarbital completely, with no ill effects and no return of convulsions. The mother noticed an immediate change in the child's personality and in her ability to pay attention, particularly to educational or learning activities. Thus, we felt our first goal, which related to the drug and to her attention span, was achieved by having her referred to a physician and his having removed the drug from her diet.

We were also concerned about A.'s daily diet because both of the parents were obese and weighed over 200 pounds, and A. was also heavy and rather inactive. We took a nutrition survey and found that she did eat quite a bit of sugar and perhaps not enough protein. For example, one day's diet looked like this: "Apple Jacks" cereal for breakfast with applesauce; hot dog and root beer for lunch; and lasagna,

brownie and ice cream for dinner. Her diet survey also revealed that she ate candy, soft drinks, and ice cream almost every single day. We invited them to a public meeting on nutrition which they gladly attended, and soon afterward A. was overheard refusing cereal for breakfast with the statement of "No, that doesn't have protein in it, I want my protein." We also suggested to the parents that they have their daughter cook with them and help around the kitchen to learn to prepare nutritious foods. They tried it and found it worked very well. In addition, we gave them several booklets and pamphlets about nutrition and discussed the elements of a proper diet. By the end of the year, we felt that there was some improvement in the family's diet due to the program's interventions.

Our educational goals centered around increasing A.'s attention span and encouraging the parents to do reading with her. We gave them the Anisa parent-child reading program and suggested that they keep a daily chart to record the amount of time that they spent reading together. Although the mother was an accountant and had taught A. to count, she did not read much herself and the child had not seen reading modeled in the home. This was one of the reasons that we encouraged a systematic reading program. Another reason was to help A. to increase her attention span, as well as to value and enjoy reading. The next month when I spoke with the mother, she said, "I was really surprised because her attention span grew so much." The child said, "That's because it's my homework!" The mother was very happy about the reading program. She said not only did A.'s attention span increase, but that now A. would look at several books a day, without

adult supervision. In other words, the child herself enjoyed reading and would do it whether or not any adult was around. Also, the mother said, "I bet we have 50 books here now just for A.!"

They attended the public meeting at the school which included a nutrition program for parents and a tour of the kindergarten with a special program for the children. The mother's comments were "I thought it was an excellent meeting; it was exceptionally good." When I asked how A. felt about the meeting, the mother responded, "She thought that it was the greatest! Everytime she goes by the school she points to it and exclaims how much fun it will be to go there. She loves learning now and thinks that this is the greatest thing in the world; she has terrific enthusiasm." The mother further explained that she liked all of the programs and would be very interested in attending another one.

Academically, this child was doing well in some areas even last year: she could count by rote to 46, and count with objects up into the teens. She knew colors and shapes and could classify easily. She did not know her letters completely, but could recognize and write a few of them. She could also write a few numbers. With the improvement in her attention span due to the removal of phenobarbital and to the systematic daily reading program, she now had a better chance of becoming a competent learner.

In September of 1975, following the year in which A. had been in the Very Early Anisa Program, I spoke with her kindergarten teacher. She wondered why I was interested in A. because she thought that the Very Early Anisa Program was to intervene and assist families whose

children were having difficulties or who were likely to have trouble in school. Therefore, she did not understand why I was interested in how A. was doing because A. was one of the best students in the kindergarten! Out of about 200 children, very few arrived at kindergarten knowing all of their capital and lower case letters. This child was one of three children in the kindergarten class who knew all of her capital and lower case letters when she arrived at school in September. Therefore, the teacher gave her the title of "teacher" and A. spent part of every day teaching other children their alphabets because she was one of the top students. I spoke with the teacher again in April of 1976, after A. had been in her kindergarten class for almost the entire academic year, and she said that A. was a delightful student, and that she was one of the best readers in the class!

I had also spoken with A.'s mother on the telephone in December of 1975 to ask her how she felt A. was doing in kindergarten and if she had any comments to share about the Very Early Anisa Program. She said that she was "extremely pleased with the program" and that she felt it was very worthwhile. She offered profuse testimonials which she said she would be very happy to put in writing if that would be helpful in confirming the value of the VEAP program. She also said that she thought highly of the kindergarten, that A. enjoyed it very much, and that A. was in love with learning and loved reading books. In addition, the mother herself has attended the kindergarten two days each week this year as a dedicated parent volunteer.

Concerning this particular case history, I shared this informa-

tion with Dr. Jordan, who is the Director of the Anisa Program, and he asked me to speculate on what would have happened to A. had there not been an early intervention before she got to kindergarten. The following comments are a purely personal interpretation, yet I feel they are provocative. Had this child not been taken off of the phenobarbital, I suspect that her attention span would have been too limited to permit her to learn academic tasks. Her moods would have ranged as they originally did from dull total indifference to such extreme forms of hyperactivity that she could not possibly pay attention to anything a teacher or a parent was trying to impart to her. Not only would these moods have interfered with her learning ability, but they would have interfered significantly with her personal relationships and her social interactions with teachers, other adults, and peers. I think that she would have created a problem for any teacher, certainly not been popular, and been designated as a child with learning disabilities. These statements are obviously of a speculative nature, yet I think this case demonstrates the value of simply checking in on children before they have reached kindergarten, and if necessary, launching a relatively inexpensive and simple form of intervention which yet can have dramatic impact on the child's likelihood of success in school. For example, many children with learning problems can be observed to demonstrate these problems at two or three years of age. Intervention can take place at that time rather than waiting until the problems become entrenched habits and trying to intervene when the child is five or six. By intervening early and by involving the parents

intimately in the child's educational program from the very beginning, it is possible to effect true prevention.

Child B, Age 2½

This case history concerns an adopted child who did not present any outstanding health problems and whose parents were willing to spend a great deal of time working with him. The main role of VEAP in this case was to enrich the educational environment and to train the parents as the child's first teachers. They were able to learn the expected developmental tasks of their son's age group and to arrange environments and guide interactions with them in a manner that optimally promoted his development. Thus, the child's routine was transformed from one of "running around and watching television" to one rich in a wide variety of educational interactions. In addition, the child was given a scholarship to attend nursery school for the academic year of 1976-77. His mother also became a regular parent volunteer at this school and thereby received additional teacher training and experience with young children.

This child was adopted at the age of 2 months. Both of his foster parents are very fond of him; the father takes great interest in him, and spends a good deal of time interacting with him, playing games, watching television, and having conversations. The foster mother is excellent with him; she's very affectionate, and has a warm atmosphere in the home. There is lots of laughter, and it is very clear that they

love the child and want to do everything they can for him. There is an older foster child in the family who is a teenage boy who also spends a lot of time with B. and contributes greatly to his education. They get on very well together.

The social worker and I made the first home visit in October 1975. We met B.'s mother and were able to discuss the program to determine what the mother viewed to be his major needs or problems and how she felt we might be able to contribute to his development. In consultation with the mother, we chose goals to work toward for this year. In the subsequent visits, of which there were about seven, or approximately one home visit every month, we would work towards these goals and discuss progress in each of the areas.

We had several goals in the area of health. The foster mother weighs over 300 pounds and has had trouble with her weight all her life. Because of this, we felt it important to check B.'s diet to be sure that he was receiving proper nutrition. As with all of the families in the program, we gave a nutrition survey which gives us an idea of whether or not the child is receiving proper food. At each visit I would bring books about nutrition and also small pamphlets such as "Food for Little Folks" which discuss a proper diet for children at this age. We now feel that he is receiving an appropriate diet, and that the program has been helpful to the whole family in this respect.

Another concern with B.'s health is that he is pigeon-toed. His mother said that he has been this way since they adopted him at the age of two months, and that they have been under regular and consistent guidance from an orthopedic surgeon. He is clumsy and one of

our goals in the program was to work on both his gross and fine motor skills. During the first visit, I noticed that he falls down quite often, and I brought this to the attention of the Well Baby Clinic where he is a regular patient.

A third concern is that his speech is sometimes difficult to understand. This was much more of a problem in the autumn than it is at this time; now he is more easy to understand. However, we felt it was worth having his hearing tested since we thought this might have been a complication. In January, his mother took him to the elementary school to have his hearing tested. Unfortunately, the test results were inconclusive because B. could not follow the directions (some children at this age are able to do so, but he was not in this case).

His major educational goals were to increase his attention span, to provide more experiences with books and with reading in the home, to improve his speech, and to work on toilet training. At the first visit, he seemed to have a very short attention span; he had a lot of energy as any two-year-old does, and his main routine was to run around and to watch television. We felt that although his mother does discipline him quite well and he is mannerly, that it might be helpful to provide more structure in the home and to include reading into his routine. They had no books in the house for him and he could not count even 1-2-3, nor could he understand any relationships of numbers with objects. He did know the names of body parts, was cooperative, and was very warm and affectionate to work with on learning tasks. As speech and reading seem to be major educational needs, we discussed with the mother the possibility of having a reading time every day. We

encouraged her to speak in full sentences, and to describe things in detail. The above comments were suggested during the second visit, which was in October.

On the third visit, in November, I was delighted to find that the mother had gone to the store and bought two books for B.--one about the alphabet and one about numbers, and that she plans to go to the library with him due to our discussing the library story hour program for children. Also a relative had given them several children's records, as I had stressed this as a means of developing B.'s listening skills and encouraging his clear speech. The materials I brought that visit were: three cloth books that B. could read by himself because they do not tear as do paper books, a list of ideas for reading with your children which was prepared as part of the Anisa Parent-Child Reading Program, and several books of poems such as Mother Goose which emphasize rhymes and listening patterns. These were books that the mother could read to B. and encourage him in listening for sound patterns.

In the December visit, the mother said that her son's attention span had improved from reading together quietly. Both of them had thoroughly enjoyed the books and materials and they intended to go to the library to renew one of the books and also to take out children's books for B. We reviewed the Anisa brochure including the five areas of psychological potentialities. We discussed ways that B. could develop his psychomotor skills through practicing gross and fine motor activities, and also I praised the mother for the wonderful things she's doing with B. in terms of affective development. She works

beautifully with him, is firm, warm, supportive, and loving. She listens carefully to what he has to say, and offers words to assist him while he is speaking and cannot think of exactly what it is he wants to say. It is really a pleasure to watch them working together, as his mother is very conscious of being his primary teacher.

On the next visit, I gave a toy telephone to B. to encourage his speech production which was very popular with him. Both of us worked with B. during this visit, reviewing some puzzles that I had left last time. The mother was pleased and surprised at how much B. enjoyed and could complete the puzzles. She asked me to bring more puzzles at subsequent visits. The child's attention span is growing, he works longer at educational tasks, and more quietly.

The most recent home visit was in April and the people present were B. and myself, his mother, his aunt, and his grandmother. Everyone apparently wanted to see what B.'s classroom at home was like. We had a wonderful time and I was able to introduce several ideas and to greatly priase what they were doing with B. I feel that he has made very good progress in several areas. His attention span has improved so much that he is able to work at the kitchen table for over an hour. Reading has become a regular routine in the home and I brought several more children's books to supplement the numerous books they now have in the home for him. I also brought two puzzles which B. did rather rapidly, although they are meant for children a year or two older than he is. This greatly pleased his mother, of course, and his relatives. I brought other toys and learning materials which emphasize psychomotor development because, although B. has improved in

this area, he can use more work to develop his finger skills. Examples are four dolls which have things to zip, snap, button, and tie and untie; and a child's workbench which has a hammer, a screwdriver, a wrench, and several tools to develop finger skills. The third toy was a small boat with three fishermen and various smaller boats and fish that has the attributes of a three-dimensional puzzle with about thirty pieces that must be fitted into very specific places. One book which I brought for the mother, entitled The Sensible Book, covers the five perceptual modes and ways to encourage children to learn through seeing, hearing, touching, smelling, and tasting. One of the books for B. was a vocabulary book listing over 500 words of common household objects to encourage him to express himself explicitly and clearly.

In summary, I feel that the VEAP Program has been of great benefit to B. and his family. He has a wonderful affective atmosphere surrounding him, with a loving mother, father and brother, and several solicitous relatives. He is also well disciplined, mannerly and courteous. I think the major effects VEAP has had are: (1) in the health area, to monitor his psychomotor problem with his feet just to be sure that he is receiving correct orthopedic treatment; (2) to monitor his diet and educate the mother a little bit about that, so that at this point we do feel confident that B. is eating well and growing on schedule; (3) his attention span and speech have greatly improved, largely due, I think, to the reading program and to the guidance that was given to the parents about doing academic tasks together; for example, having books in the home and working on the alphabet, numbers, and various cognitive concepts.

I think for future reference, this child currently presents no outstanding problems, although I would watch both his orthopedic needs and his diet. I would again check whether or not he is unduly clumsy and falling more than normal, and also check his hearing again. I think his speech should be watched to be sure that it is developing on schedule, although I feel at this point that it appears to be and there are no outstanding problems in that area. His parents are highly positive about the program and about him. They have often expressed thanks for the program and have thoroughly enjoyed B.'s learning materials as well as the material for parents such as the brochure about the Anisa Model, numerous pamphlets about health and nutrition, and several library books on various aspects of child development. They take a great interest in their son and are doing a wonderful job as parents in raising a quick, bright, and delightful little boy.

In June, B. was given a scholarship to attend Cooperative Nursery School for 1976-77. His mother will also be a regular volunteer there.

Child C, Age 4; Child D, Age 3

This case history of two young children indicates a family that had multiple problems and required social work, health and nutritional intervention, and a major educational program. The two young children in the VEAP program had four older siblings who, the administrators of the school system informed us, had had considerable problems for over ten years. However, after the VEAP program had worked with the mother and the younger children continuously over a period of two years, these

same administrators remarked at the marvelous changes in all of the children and in the mother's attitude toward the public school system. This transformation again confirmed our conviction that early intervention is most effective in resolving problems which cannot be dealt with by other means. The need for a multidisciplinary team approach is also evident in this case, as a social worker alone, or an educator or health specialist alone could not have made a significant impact on the complex of forces inhibiting growth and development in this family.

This family has been in the Very Early Anisa Program for two years. When we began, C. was four and D. was three, and neither of them were in preschool. This year, C. is five and is in kindergarten; and D. is four and is in nursery school. In giving this case history, I will begin with the reports from last year and proceed chronologically to the present. The social worker knew the family previously because they had numerous problems. The family had suffered a divorce and remarriage, and when we first began visiting in December of 1974, the home was in quite an upheaval. The father was out of work and had a serious hip operation.

When we visited, the house was very dirty, with a swarm of flies over the dining room table. Both children were running around inside, and they were known to the neighbors as "very physical." I suspected at that time that they were hyperactive. When we visited, the social worker took the developmental histories by an interview with the mother while I worked with the youngsters. A neighboring child was there and with the three children I sat down at the kitchen table

to do educational activities. They seemed to be on a reasonable academic level for speech, colors, shapes, numbers, and classification exercises. However, there were social problems. C. kept clobbering D. over the head full force. After I had to break them up three or four times, we gave up group activities. The children then proceeded to run around the house screaming at the top of their lungs. The mother said that they did not normally do that, but I felt fairly certain that they did normally do that. They were very rough. My comment in the log at that time was that they seemed to be doing "okay" academically but socially they were "in shambles." The TV was blaring continually and the children were not only overactive but rather violent, so I felt at the time that emphasis must be placed upon nonviolence, quelling aggressiveness, and emphasizing social skills, particularly cooperation and obeying ground rules.

Although this family was in the VEAP Program last year, very little was accomplished at that time for numerous reasons. Therefore, I would like to skip forward to September, 1975, when we began visiting the family again and picked up where we had left off the previous year. The VEAP team had reommended to the town social worker that D. receive a scholarship to nursery school. Because this scholarship provided the opportunity for the child to attend nursery school, and because we had strongly urged the mother to enter the child in such a program if possible, we feel it is due to the last year's VEAP efforts that D. was able to attend nursery school this year. As one can imagine, his transition from such a home environment to the orderly school setting was not without difficulties. He managed to run the

school ragged in his first few days there by completely and utterly disregarding all of the rules. He was so totally unmanageable that finally in desperation the teachers called the town social worker and asked her to visit the family. I saw the teachers at the end of September and they were greatly relieved to hear from me about the home situation because that knowledge immediately made D.'s behavior understandable. At home he had no ground rules, structure, or discipline. He was the baby of the family and had his own way, so much so that no one crossed him. We reached unanimous agreement that his first assignment with VEAP this year would be to learn to obey ground rules.

The mother was invited by the teachers to come to the Nursery School and to help them help her son to obey the rules. By working together daily for two weeks they were able to bring the child under control. The teachers further helped the mother to learn how to work with him at home to set up ground rules and to maintain them through firmness and clearly defined limits. The results have been little short of miraculous. At school D. obeys the ground rules and does not test them with the teachers; at home the mother has learned to discipline and keep not only D., but also C. and the other siblings, under reasonable control. They no longer run around the house or get out of hand. She gives them simple, firm, clear instructions, and they quietly obey them. Now the atmosphere at home is far calmer and happier than it was last year.

The mother said that none of her other children went to preschool and in fact that she had thought that preschools were "glorified babysitting operations." Now she says that the three younger children

of her six that have had Anisa experiences, both at home and in school, are faring substantially better than the three older children who have not been exposed to the Anisa system. She is very happy about Anisa and is eager to volunteer in the preschool, kindergarten, and in the first and second grades. (She has children in each of these grade levels.) The children's progress also interested her mother, who was a school teacher and was present at one of the home visits. We discussed at length the concepts of ground rules and moral competence, the expectation that children can learn to obey reasonable guidelines in order to assist themselves and other children in creating the best atmosphere for learning. I answered many questions they asked about Anisa. They are very enthusiastic about it, and the father is building cabinets for the Nursery School.

During the December home visit, the mother asked me all about the Feingold diet because C.'s kindergarten teacher had suggested it for him because of his distractability and apparent hyperactivity. We discussed it at length and I answered many of her questions and referred her to the nursery teacher for the Feingold book and a copy of the diet. I asked her to fill out a nutrition survey which would give us an idea of what foods might be causing C.'s problems. When I visited in January, the mother asked many more questions about the diet and felt that it had really helped her son. She began putting him on the diet in December and noticed a change immediately. C.'s teacher said that his behavior and attention span were markedly and permanently improved by the diet. Encouraged by this lasting success, the mother put an older son, age 10, on the diet with similar positive results. Parents'

experiences with this diet are being recorded in a separate document; therefore, I'll not discuss it further at this point.

To return to the younger child, D., in December the teachers said that he now obeyed ground rules so well that they felt that goal had been achieved. They told his mother that he would be able to read soon if she could help him with his letters, so letters became our mutual goal. I brought several educational materials to help D. to learn his letters, including numerous alphabet books and a pegboard of letters, and I also gave his mother many ideas of how to help him learn his letters. In February we discussed his report card, which was excellent, and set goals, one of which was to learn the 12 lower case letters that he did not yet recognize. He knows all of the other letters and is beginning to write them. His attention span is remarkably long and he learns very quickly. The mother plans to do more volunteering this year and is already planning to volunteer as much as she can next year because all of her children will be in school and she is highly positive about the entire Anisa Program.

In March I spoke on the telephone with D.'s nursery school teacher. She said that during an activity on the platform, she had asked the children what made them happy. D. had replied with great joy "When Beth comes and opens up the bag of toys!" That warmed our hearts, of course. When I called his mother on the phone she also said that he talks about the visits all the time and uses the toys and learning materials and books <u>every single day</u>, and that he loves school and is very eager about learning.

I think this case history of the family gives an idea of how

one must keep working with families to develop relationships over more than one year. For example, in this case, very little was accomplished in the first year. However, at the beginning of the second year when we were called upon to work together, great results became apparent within the first month. Whereas last year the VEAP team was rather discouraged about not having made progress with this family, this year we view this family as one of the most successful experiences of the program. Both C. and D. have shown great progress in terms of increased learning ability, discipline, ability to pay attention, and acceptance of structure, all of which enable them to benefit from school experiences. Their social skills have greatly improved and they are beginning their school careers in a very positive light. The problems which arose with both children when they first arrived at school were resolved within months, which is a relatively rare occurrence when it comes to straightening out learning disabilities. This again demonstrates the efficacy of very early intervention, and particularly of working in the home and with the mother, who in the last analysis is the major educator.

Final "Report Card" from preschool for Child D.:

AFFECTIVE AREA

Shows independence *yes*
Practices self-control *yes*
Conforms to rules *yes*

VOLITIONAL AREA

Pays attention *yes*
Sets realistic goals for himself *yes*
Perseveres to complete a task independently *yes*

PERCEPTUAL AREA

Recognizes similarities and differences in objects *yes*
Discriminates between beginning sounds *is working on this*
Recognizes rhyming words *is working on this, too*

PSYCHOMOTOR AREA

Holds pencil properly *yes*
Forms these letters properly: *Straights: LHEFTI; circles: OQC and part of name in lower case*
Forms these numbers properly: *1, 2, 3*
Hops at least 10 feet on right foot *needs some practice*
Hops at least 10 feet on left foot *yes*
Walks 2 inch wide balance beam heel to toe forward *yes*
Walks 4 inch wide balance beam heel to toe backward *yes*
Can skip *not yet*

COGNITIVE AREA

Recognizes and names colors *all*
Recognizes and names letters of the alphabet
1. Capitals *all*
2. Lower case *all but q*
Recognizes and names plane shapes: circle, square, rectangle, triangle *all*
Recognizes and names solid shapes: cone, cube, rectangular box *all*
Recognizes numerals to: *100*

SPECIAL STRENGTHS OR WEAKNESSES

D. knows how beautifully he's done this year. What a worker! He quickly learned to follow rules and after that he's just flown. He learns quickly, retains well, is enthusiastic, is careful and completes his work. He's willing now to try new experiences and enjoys them. You've helped him learn all his letters and academically he's done so well.

Child E, Age 4

This family did not have social problems or even educational problems as far as the school system was concerned because its one child who attended school was very bright. However, the young child who was in the VEAP program had a hearing problem which impaired her

speech development and caused the mother to come to the conclusion that the child was retarded. The case history demonstrates how the child's speech problem was analyzed and the mother's attitude was corrected to enable the child to begin school in good standing.

She will be entering kindergarten in the fall. She has an older brother who is in first grade and is six years old. This family attended several of the Anisa parent meetings last year when E. was 3 and they received several home visits from the social worker and the developmental specialist. This year they have received about ten home visits, and at least fifteen telephone calls to discuss their child's progress.

The major needs in this case were to improve the mother's attitude toward the daughter, and to investigate the child's speech and hearing.

During the first home visits, when the child first joined the program, the mother said that she felt the child was "slow and dumb." In fact, she felt that the child was rather retarded and that something was perhaps wrong with her brain. Because of this attitude, she tended to avoid the child and to not interact with her or try to teach her, because she found it frustrating and discouraging. The mother had ulcerous colitis and was unhappy and nervous. She was quite concerned about her daughter's being "dumb" and asked if we could have a speech analysis carried out to see if there was indeed something wrong.

E. has a very bright older brother who attended kindergarten and brought Anisa ideas home, which inspired the parents to arrange the

home environment exactly like the school environment. It is an ideal physical environment, with appropriate toys, books, desks, papers, pens, manipulative materials, lighting, and cleanliness. The mother favors the son dramatically, partly because he is so bright, and when I once suggested very gently that she give her daughter a bit more full attention, for example when the son was at school, she reacted very defensively. She did not find it rewarding to work with E., because she felt that the girl was dumb and could not learn.

At that time, when E. was three years old, I gave her an educational evaluation and found that she was operating on a reasonable level for that age. She knew some shapes, colors, letters, and numbers; could do comprehensive classification with attribute blocks, could count into the teens, and could write some letters and numbers. She was familiar with books, could turn the pages and discuss the pictures.

Although we were not as concerned about her speech as her mother was, we did arrange for a speech analysis which was carried out by the school's speech specialist in June, 1975. The following comments are excerpts from her professional report: "[E.'s] articulation was clear; her speech was easy to understand. Articulation development is well within normal limits. She was able to pick out correct pictures in response to orally presented single words, with somewhat below average ability. She scored at an age of 3-9, whereas her chronological age is 4-5. All other tasks indicated much difficulty with language. She did not know the names of many of the pictured objects on the articulation test; for example, when she was shown a cup, she would say 'drink . . .

when the coffee' or when shown a wheel, she would say 'rolling thing.'"

"Her sentences included syntactical errors. Her repetition of transformational sentences included many errors. Only half of her answers were correct. Some of her errors were indicative of auditory reception difficulties. For example, she repeated 'the baby carriage is here' as 'baby catches her ear.' Her general behavior also indicated difficulty with hearing or language reception. She moved very close to me during listening tasks, she frequently asked for repetitions, and she made inappropriate responses."

The speech specialist recommended that E. should have a complete audiological evaluation before any more formal language testing or remediation is attempted. She felt that complete testing was necessary, and that the child should be scheduled for a psychological evaluation and an assessment of auditory perceptual and language skills when the audiological evaluation was completed.

The above testing was completed in June, and when we began the VEAP program again this September, the mother was in better spirits and generally more positive than the previous year. In following up the speech analysis, the child was tested at the University of Connecticut in October, 1975. Those tests revealed that she was only hearing 80 percent in the right ear, and 88 percent in the left ear. This may not sound like a significant hearing loss, but the examiner explained that it was similar to holding one's fingers in one's ears and that it effectively cut out most normal communications sounds, for example, conversations. The child was then referred to an ear doctor, who found that there was so much wax in her ears that he was only able to clean

out half of it, to give the mother ear drops to help melt the wax, and to set another appointment in two weeks' time. At the following visit, when he was able to remove all of the wax, he discovered that a piece of paper or cotton, possibly from a Q-tip, had been lodged in the child's ear and that it had caused the wax to build up and an infection to develop. He felt this problem could have existed for as long as two years. Because of the infection, there was fluid behind the eardrum, and the doctor therefore put the child on antibiotics to attempt to drain the infection. If this approach does not work, he may later try to insert small tubes to drain the infection out of the middle ear.

Following the audiological evaluations, and the ear doctor's explanation and gradual correction of the child's hearing problem, the mother was better able to understand the root of some of the child's difficulties and apparent slowness. She noticed that the child was doing better soon after her ears were unclogged and that she was then able to hear better. However, she still felt that E.'s brain was the root of the problem, more than her ears. Therefore, we tried several tactics to help the mother understand that the child was on a reasonable developmental level, and particularly that she was not retarded. To convince the mother of this matter, Miss Z, the school's speech, hearing and language specialist, came to the home and met with the mother. They consulted for 1½ hours, and it was a great relief to the mother to find that E. is doing reasonably well for her age level. Miss Z lent her a developmentally-based speech book which gives clear expectations for the child's speech at each age. They discussed

many examples, and the specialist demonstrated to the mother how to speak with E., giving many specific suggestions, such as to speak clearly, slowly, and with no noise in the background. She explained the doctor's comments about fluid behind the eardrums, and it was a comfort to the mother to find out that this condition is fairly common, that it can almost always be corrected, and that there was no permanent damage. Miss Z felt that if we built on the child's other strengths, that her hearing and speech development would catch up with her other areas of learning. She gave the mother assignments for noting speech improvements and for giving the child specific lessons in speech interaction and in listening. Miss Z will keep in touch with the mother to monitor E.'s progress and to lend her books that relate to various areas of speech, for example, vocabulary books, descriptive books, and exercise books which give specific speech lessons. The mother was very grateful to have met with Miss Z and to have access to her knowledge; she can call her anytime she has questions about E.'s speech. She admitted that she is still discouraged and feels mildly negative, but although she does not interact very much with her daughter, she said she would make an effort to do so and she really felt more hopeful about the child than she ever had. She will also visit the ear doctor regularly to be sure that the infection is draining and that there are no relapses or further complications.

To help the mother develop a positive image of the child, the developmental specialist did many exercises with E. in academic areas which did not depend upon hearing and speech to demonstrate the child's competence to the mother. For example, we did many art activities, in

which E. is very advanced, and many of her homework assignments centered around mathematics, another area in which she is quite strong. I lent the mother books based upon the work of Piaget, who has created developmental tests for children that reveal their competencies in various areas. We discussed these tests and did them with the child, and the mother was surprised to find out that in fact E. was ahead of her age group in the areas of art and mathematics. This helped the mother to see that there was no problem with E.'s brain, but rather that the areas in which she was slow were directly related to the fact that she had difficulty hearing and therefore would logically have trouble with speech and with tasks such as learning letters, specific sounds, phonics, and various pre-reading exercises.

We suggested going to the library's weekly story hour to help E. with her listening skills, and they did that both semesters. They go every week and sign out books which they bring home, read, and enjoy very much. We had also suggested that playmates might help E. to practice her speech and to express herself spontaneously. (She was rather self-conscious around adults because she knew her mother felt negative about her speech, therefore she tended to keep rather quiet.) They did find a playmate for her, a younger child, which was a good thing because E. felt confident in speaking with her and indeed developed quite a lot of language from this companionship.

As these two major goals of correcting E.'s hearing and speech problems and improving the mother's image of and emotional attitude toward the child were ongoing, we also completed several academic goals, including having E. learn to recognize the numbers 1 to 10, and to recog-

nize and write all capital letters.

The most recent home visit was in March, 1976. For the first time in two years, the mother realized that she had held inaccurate expectations of her daughter and that in fact the child was really doing all right for her age, but that the problem was that the mother was expecting too much of her. She was very positive and happy with the child, warmer and more affectionate than we had ever seen them together. She now enjoys working with E. and consequently spends quite a bit of time with her doing reading, speech games, listening to records, and general conversation, all of which serve to greatly improve E.'s speech abilities. The emotional atmosphere in the home is greatly improved, with mother and child happy about each other, and eager to learn together. The father also takes an active interest in the children, and gives profuse attention to them and to their education. He attended parent programs and enjoys the books and learning materials that are brought to the home by the program as much as the mother does.

In retrospect, when looking at this family's development over the past two years, one can again see the value of an early intervention program, in that if this child had arrived at kindergarten with a hearing and speech problem, she would have almost certainly developed learning disabilities, particularly in the area of reading. By early intervention during the child's third and fourth years, it was possible to correct this problem and set the child on an even keel, so that she could start kindergarten with her best foot forward.

One of the most significant aspects of this case is that the

mother's attitude to the child was transformed from a rather negative and guilty feeling that the child was dumb to a very positive and supportive feeling that the child had a correctable hearing problem that would be overcome if both mother and child worked together and if the child received enough support and encouragement to become a confident speaker. I think this emotional element cannot be overlooked and may very likely not have been addressed by the traditional school approach. Now the child can go confidently forward into kindergarten, knowing that her mother will support and help her in any difficulties she encounters. It has improved both self-images: the mother's image of herself and the child's sense of her own person.

Child F, Age 4

Obviously, in working with severely disadvantaged families who have long-standing, hard-core, and multiple problems, complete solutions and "happily ever after's" are rather rare occurrences. A more realistic approach is to analyze the extent and variety of the problems and to begin to solve them through a team approach that takes into full consideration the complexity of the health, nutritional, social, and educational aspects of the family's difficulties. This case is given to demonstrate the depths of such problems and that even after a year or two of consistent intervention, major problems are still outstanding. However, such a case may be encouraging in the sense that it begins to get at the root of the problem whereas no other approach is capable of doing even that. This case also demonstrates how inextricably intermixedare the problems of the parents and their off-

spring. In this family one sees mental health problems emerging in the children just as in the parents. Again, the early intervention approach may hold promise for providing mental health services directly to families who would not of their own accord reach out for them, but who desperately need mental health help. Also, this case gives an idea of how two years of intervention before the child even reaches kindergarten may put him on firmer educational footing.

This family was in the Very Early Anisa Program for a year and a half. The family moved out of town in January, 1976 and had to be dropped from the program. On our first home visit we did not see F. because he was asleep in front of the television set. His mother was hostile at the social worker and the developmental specialist because she thought that we had something to do with F.'s older brother, who is 11 years old and has serious learning problems. After she found out that we were with the Anisa Program, she changed completely, and became very friendly, because she is very happy with the nursery school and says that F.'s behavior has improved considerably since he began to attend nursery school. She said that she does not know her child at all; he is apathetic, has no interests, and only watches TV. He is a poor eater, and is dull and listless. Her comments made us immediately suspect health problems, therefore we gave her two surveys: one concerning the pregnancy and birth history, and another one concerning the child's nutritional status. The following are excerpts from those surveys which the mother filled out and then discussed in interviews with the social worker and the developmental specialist. Thus the fol-

lowing comments include the professionals' comments as well as those of the mother.

The mother said that she was fearful during this pregnancy, that she was full of hatred and fear, intensely negative, cried a lot, and "hated everyone." She had had two miscarriages previous to this pregnancy, and had a severe cold during the eighth month, for which she was given penicillin.

During the first two years of the child's life, he was sick very often, had moderate sleeping problems, poor food habits, and although he did not bang his head, he would rock very, very hard in his chair. He was indifferent to people. The mother later discovered, when the child was three or four that he had had asthma and allergies since birth. The family had not known that, they had thought that it was colds. He is now on the medication Quibron when he needs it for the asthma or allergy, and the mother says that the medication makes him hyperactive. He is in bad health, with constant colds, coughs, and mucus in the nose and eyes. When we first met him we were immediately struck by his poor general appearance, his paleness, rough dull hair, too bright eyes, and his moods that ranged from dull listlessness to extreme activity with violence. In fact, his manic moods seemed to border on the psychotic, as he showed an excess of fantasy play bordering on the weird; always screaming and carrying on about scary monsters. Frankly, those moods were so intense it was a little unnerving to be around him at that time.

Intellectually and developmentally, he is at least a year or two behind his peers. It was evident when he was a four year old that

he would not be ready for kindergarten, and there was even question of whether he would be able to go into a normal classroom. He had a very low attention span, and was unable and/or unwilling to attend long enough to even complete short and very simple tasks. For example, I took geometric attribute blocks (shapes and colors) to his house to do very simple games. He had difficulty attending to the task, even to do simple sorting such as separating colors or shapes. He kept distracting himself and going off course, running around the room in circles. He is in the graphic collections stage where a square and a triangle are put together to make a house, and two circles are a snowman, blocks represent books, etc. He confuses blue and red colors. He has little grasp of numbers and can barely manage 1-5 with objects, and when counting by rote to 10 he makes mistakes. He seems to have no knowledge of letters, and his speech is not good. He has to be urged to speak, and wh ɔ he does it is mostly in fragments, and rarely in complete sentences. This short exercise was liberally interspersed with intense fantasy play about weird, scary monsters.

Our impression from the home and from the child's behavior is that he is totally unstructured, he is set in front of the TV which serves as a babysitter. The father has an alcoholic problem, and sits apathetically in front of the TV getting drunk on a six-pack of beer. It appears that the child models his stance. This is the mother's second marriage, and she appears to have emotional problems as she is very tense and hostile. She is punitive and negative toward the child. On the other hand, the father spoils the child and the older brother indulges him by helping him too much and babying him, for example, by

dressing him: the child rarely dresses himself (at ages 4 and 5).

The questionnaire entitled "The Prior Experience Inventory" revealed several problem areas; for example, when asked "Which of these things has your child learned to do without being reminded to do them?", the answer was "no" to all of the following: brush his teeth, hang up clothes, dress himself, put toys away, and wash hands before eating. Another unusual attribute the parent marked was that the child does not enjoy physical activities such as rolling, climbing, jumping, and balancing. Most children at this age love such physical activities, yet it appears that F. was quite apathetic. He did not use magazines and books by himself, did not know more than three or four letters, had not been worked with on letters or numbers in the home, and the parents wrote that they had not read to the child more than one or two times a month. There were also very few children's books in the home. It appeared that the child spent all of his time in front of the TV with very little interaction with the parents or sibling. The TV was left on very loud continuously. There was no monitoring of what the child saw on television or of how much television he watched. The home environment was generally simply inappropriate for a young child; there were few materials for learning; there was little or no stimulation of mature behavior; the building had potentially dangerous structural defects and was very dirty; and the mother was negative, punitive, and threatening toward the child. The family also has financial difficulties.

In summary, during the first year we felt a great need for a whole battery of specialists to do medical and educational interven-

tions and to obtain alcoholic help for the father, mental health help for both parents, and general social work help for the whole family. Specifically, the child needed referrals for a complete medical exam, developmental exam, psychological and psychiatric testing, and speech analysis.

The developmental specialist met with the school's learning disabilities specialist to discuss F.'s diagnosis and possible intervention strategies. The learning disabilities specialist had seen him at the kindergarten screening, and felt that he was very definitely not ready for kindergarten: he appeared shy and clung to his mother, had drawn a monster in the draw-a-man test, had acted "very young," had an unusual pencil grasp, was clumsy, babyish, very distractable, and demonstrated major needs in all academic areas.

During the second year of the program, the mother had begun to trust the VEAP team enough to really discuss F.'s situation openly and in full confidence. In November of 1975, the developmental specialist had an excellent visit with the mother; they went over F.'s kindergarten educational evaluation in great detail, and the mother now has a frank understanding of his developmental lags and is eager to work with him on all fronts. The developmental specialist had asked the nursery school to send home assignments every week, which she would then discuss in detail with the mother, and supplement with toys and books from the toy-lending library. In that way the developmental specialist was able to demonstrate for the mother each specific assignment, and to show her various strategies for meeting each of the educational goals. For example, this child needed gross and fine motor work. There-

fore, the assignment for one week was to have F.'s brother play ball with him one-half hour per day, throwing the ball for him to catch at a distance of ten feet. Another psychomotor assignment might be to have the parents see if F. could walk forward and backward toe-to-heel, or to see if he could hop on the left foot or the right foot for one minute each. These may sound like simplistic assignments, but when the exercises are pursued over a period of weeks or months, the child's gross motor skills are very likely to improve. In addition, a psychomotor assignment is not threatening to a non-academic parent, as a cognitive or academic assignment might be.

As F.'s attention span was still a major problem, we asked about medical exams, the diet, and a regular reading program. The diet is much improved, partly due to this program's intervention, and also due to the Weight Watcher's Program that the mother has joined. The house is also cleaner, which alleviates the child's allergies and asthma , as he seemed to be allergic to dust. In addition to the improved health situation, we asked the parents to try the Parent-Child Reading Program, and to read every day with F. We gave them several children's books and many ideas on how to read to children. They enjoyed that program, began to read daily with him, began to use the library regularly, and joined a monthly children's book club, which sends children's favorites to the home every month. They also decided to get a child-size desk and chair for F., to assist him with his studies. These simple changes represented major breakthroughs; by the time of the December visit, the mother began asking many, many questions about how to help F. With the developmental specialist, she went

over the nursery school's progress report form, which gives 30 to 50 items indicating the child's level of performance. Together the mother and the developmental specialist discussed each of these items, and made plans for how to strengthen F.'s weak areas. For example, he continued to need help in the psychomotor area, and with simple knowledge, such as that of colors, shapes and numbers.

His teachers say that he is improving and is beginning to catch up to his marked developmental lag. The parents have begun to give him much more than they did last year in terms of time and attention, warmth and affection, and appropriate materials for this age: a desk and chairs, a special storage space for his toys and books, and appropriate toys, games, books, and records. We felt that these changes represented great gains on the part of the whole family. Some were due to improved general circumstances, but certainly a great deal were due to the fine nursery school program and the home-school cooperation through the VEAP Program. This bridge enabled the mother to understand the child's problems in depth, and to begin to address those problems by very simple yet systematic means in the home. The developmental specialist was able to serve as a home teacher both for the mother and for the child, and also to serve to strengthen the mother's self-esteem and her sense of competence as a teacher of her child.

This family also demonstrates the positive mental health effect of such a home intervention program. For example, the social worker was able to refer the family to Alcoholics Anonymous, to Al-Anon which is an organization for the wives of alcoholics, and to Financial Aid. At one point the mother felt she would have to withdraw the child from

nursery school because they could no longer afford it. Yet the social worker was able to discuss the matter with the mother and the teacher to work out an equitable arrangement that enabled the child to continue to attend the nursery school on a partial scholarship. I think the mere fact that someone cared enough to make that effort was a great source of strength for the mother in particular; it demonstrated to her the school staff's willingness to reach out and support their students, and their sense of the importance of the very early years, i.e., that they were not willing to have a child be forced to drop out at that age, particularly a child who so obviously would benefit from the nursery school experience. This example illustrates the efficacy of this kind of program as a preventive approach to mental health problems in both children and their families; in addition it provides a way of reaching out for families who would not themselves come out and search for mental health help.

At this stage, I feel far more hopeful about F.'s career than I could two years ago, yet I feel for future reference one may want to keep close watch on his health, particularly his allergies and asthma, his diet, the level of cleanliness in the house, and his "psychotic moods." The general family stability should also be watched, to see if the father's alcoholic problem is coming under control and if the financial and marital situations are firm. The child's speech and general cognitive development should also be very thoroughly tested at the beginning of kindergarten so that the teachers will understand his developmental level and will be able to rally services behind him, particularly learning disabilities services which will very likely be

needed, at least in the early stages. I think with proper health, family stability, and solid academic support, this child need not be in the bottom part of his class but that he may turn out to be a reasonably good student.

One can see from such case histories that hard-core problems may be better approached prenatally or in infancy rather than even during the preschool years. It is also indisputable that the parents must be involved in any intervention that hopes to improve the child's fate. This case is a demonstration of the compounded health and education problems that can beset families suffering from gross ignorance. Although this form of intervention is by no means a complete solution, it begins to enable the parents to cope with apparently insurmountable problems. However, if society is serious about preventing or even alleviating such severe problems, considerably more intensive and extensive efforts will have to be launched.

Child G, Age 4

The next case history, although perhaps equally serious, is slightly more hopeful in that one can see definite progress on the part of both children and parents. It portrays a family who has suffered societal discrimination and considerable suffering in its relationship to the public school system, and yet one that continues to reach out for help and assistance and is determined to surmount many of its difficulties. In this case, the mother had severe learning disabilities and yet was able to gain sufficient confidence to desire to further her

education and especially to learn everything she possibly could to support her children's educational efforts. We felt that this took great courage and fortitude on her part. Although extremely difficult and demanding, this case was very rewarding because we could see the reversal of long-standing problems and the beginnings of an approach to solutions for all of the family members, not only for the target child.

When this child began to attend nursery school, he was promptly referred to us by his teachers and by the Well Baby Clinic because they knew his two older sisters and said that they both "had acted as if they were raised in a closet," and were severely lagging in their educational growth. The family does seem to be culturally deprived and to have serious problems. The mother has a very low self-concept, lacks confidence, and feels that she doesn't know how to raise children. She asked immediately if the Very Early Anisa Program would help her daughters, and we said that it would although her son was our main target. The major goals for this family are to improve the mother's self-concept and to help her to be a more competent teacher, to work on G.'s speech which is almost unintelligible, to help the mother apply appropriate discipline and structure with all of the children, and to investigate G.'s hearing and general health problems.

On the first home visit, we found G. to be a very warm and likeable fellow, and quite affectionate, although the teachers say that one of his goals must be to stop hitting other children. That I could understand, because at the home he hit his sister rather routinely while I was there and even took a swing at me. He wasn't angry, it was just

part of the normal course of events: rough. By November, by discussing this with the mother and with help from the teachers, G. was able to learn to stop hitting other children and that was no longer a problem.

We had rather extensive involvement with this case because of G.'s great needs. There were at least monthly home visits by the developmental specialist; she also met monthly with G.'s teachers, observed him several times at school, and spoke with the mother several additional times on the telephone. In addition, the social worker made four or five visits to the home; she was following up learning disabilities referrals on the two other children as well as helping with G.'s case.

G. has a major speech problem. We suspected a hearing difficulty and had his hearing tested in October by the state, and he passed the test. However, we are still suspicious because his health also needs examining. He has "chronic bronchitis" with head, nose, and lungs always congested throughout the winter. This leads us to continue to suspect hearing problems. His speech is almost impossible to understand; his mother said "He speaks like a Chinaman," meaning that no one can understand him, except the immediate family. The nursery school is referring him for speech analysis, and one reason they also suspected auditory reception difficulties was that he often leaves off last syllables, especially consonants, for example, if he were counting he would say "one, two, three, four, fi, si, se, ei, ni," leaving off the last part of each of the words. Beginning consonants are also confused, such as for cat he will say "chat." The first major goal must be to get his speech organized because this is greatly interfering with his learning

and his social relations. Teacher's comments in October were that he doesn't respond when people are speaking to him, that he has a very big attention problem, that his speech is very hard to understand, and that they question whether he is hearing. Therefore, one can see that this problem is interfering with all of his other learning.

In late spring, March or April, G. did receive a speech analysis. Special speech classes were set up for him and two other nursery school children; it met twice a week before their regular nursery school class. This six or seven-month time lag is a commentary on the importance of an early intervention program because had this problem appeared for the first time in kindergarten, it would have very likely taken at least that much time to receive attention, whereas now at least the attention is being given sometime before the child begins kindergarten. Ideally, the problem would have been recognized when the girls first entered school three years ago, and the mother could have been worked with in a home-based program while G. was in infancy and coming along through his second and third years when speech began to develop at its most rapid rate, thereby preventing the problem before it became an established habit and interfered significantly with most aspects of his learning and development.

Concerning other academic areas, G. did surprisingly well in mathematics. He worked with numbers up to ten with objects very well, and had no trouble counting and manipulating the numbers with the objects. He knew some colors and shapes and simple classification. He showed me some animal books and said their names; although he is hard to understand, he is consistent in giving the same name each time.

He did not recognize any letter or number symbols; when I later asked his teachers, they said he knows very few, if any.

Two major interventions with this family were that the child was offered the opportunity to come to school five days a week instead of two or three, without paying any additional money, an offer which the family gladly accepted. The mother was invited to come to school as often as she liked and to be a paid volunteer, which means that if another mother is absent she can fill in and receive payment for her services. This helped her self-esteem enormously, by virtue of the fact that we would actually want her to come and be a paid volunteer, and it also helped her to gain more ideas for appropriate educational activities. She said that she wants to volunteer a lot next year at the kindergarten because all of her children will be in school, and she felt that volunteering would be the best way for her to learn how to help them learn.

The following excerpts from the log taken during each home visit may give an indication of how one must work in supporting the parent in every effort they are able to make. For example, in this case, the mother was limited and she had been "put down" for that all of her life; therefore someone else coming in and telling her the same thing all over again would have worsened the situation rather than been of any assistance. By providing understanding and consistent support, the mother began to really open up and share her concerns about the children and to express the desire that she really wanted to know how to help them.

The prior experience inventory suggested the need for structure,

discipline, and daily learning activities in reading, writing, letters, and any activities that would strengthen the child's attention span and the family's attitude to learning. When I met with the mother in November, I told her the results of the educational evaluation and that her son is significantly behind the other children in his age group. We both recognized that speech was the first need; therefore I asked her to stress clear speech and pronunciation, to do daily activities with listening, reading, and conversation, and to write them down. We discussed stimulating mature behavior, especially discipline and obeying ground rules. They are going to work on shapes and colors, practicing a very simple assignment of learning to recognize and name yellow, blue, green, red, triangle, circle, square, and rectangle. I told her where the other children his age are academically and what is expected of preschool children, for example, to recognize numbers and letters. The nursery school also lent her books and magazines in addition to the materials I was able to bring into the home. We emphasized ground rules, the need to work on attention span, and the need to have daily learning activities in the home in a quiet, consistent, and pleasant atmosphere.

As we discussed G.'s educational needs, the mother said that she is very troubled about all three children, and particularly about the girls because they can barely read. She said that she herself can barely read and avoids it, and that although her husband is good at math, she can only add and subtract, and not multiply or divide. We discussed the Right to Read Program (to teach illiterate adults to read) and I gave her the telephone numbers to get in touch with the program

staff if she was interested. Because she was so easily discouraged, I tried to be supportive and very clear in setting assignments. For example, one day I had brought an alphabet of cardboard letters and a flannelboard with traced letter outlines designed so that each letter fitted into a specific place. I did the activity with G. two or three times to model patient and direct interaction, clear pronunciation, repetition, praise, and a generally positive attitude to learning. They are going to try to learn all the capital letters for the next time, as G. knows very few if any. At the next visit, the mother said that she was proud to have been able to work with G., that he was learning the letters very well, and that they were now ready to work on lower case letters. She felt confident that she had done a good job in teaching him and this encouraged her to set up a daily study time at home. Also, the sisters have become interested in the program and they too set up homework for G. and do it together. The father has expressed interest in VEAP and is very happy with the interest the program has taken in his children, particularly the fact that we come right to the home.

In summary, we feel that the family has come a great distance during this year and that they are beginning to support G. and to establish a better groundwork for his education. The mother has become more confident and positive; she feels more able to teach her children, and she has become more outgoing, partly due to volunteering in the nursery school and having a successful experience with the children. She still needs support in learning to consistently apply ground rules and discipline. For example, we had discussed the Feingold diet several

times and the mother was interested in doing it, but she felt ineffective, i.e., that if she tried it it would fail or that she would not be able to consistently enforce the diet. Although she sounded futile about it, I think she would really like to try it if she felt confident that she could do it; therefore the teachers are encouraging her and if she does express interest later, they will help her to apply the diet as it would possibly help all three children. For future, G.'s hearing and speech should be closely monitored, and he will need academic enrichment until he shows substantial gains. We feel tentatively that he is gaining ground, but he is still at least six months or a year behind.

In terms of materials we supplied a wide range of educational toys, puzzles, pamphlets and books to the family. For example, at each visit we brought four or five books that usually concerned letters or numbers; we often brought puzzles and blocks with which the children could learn counting, colors and shapes; and several very simple pamphlets for the parents because they did express concern about having difficulty reading books that we had brought them. At this point, we feel that a firm and solid relationship has been set up with the family which will improve relations between the home and the school over the future years. I feel the approach of visiting the home and being supportive of the parents, as well as directing efforts to the children, is the most effective method currently available to us, particularly in such a difficult case where it is apparent that one will have to work over several years to strengthen the parents' role as teachers. I think that although at this point there are still great

difficulties, the mother feels more confident in facing them and she feels more able to tackle the problems and to lend her children assistance. In other words, although outstanding problems still exist, this approach begins to get at the root of the problem and to make a definitive and lasting effect on the family situation.

Child H, Age 4

This history is presented as an example of how the material aspect of the program, mainly the delivery of at least $50 worth of educational materials to the home every month, has a great influence on the child's educational growth, especially when it is coupled with parents' attentive efforts to teach their child. Although this case did not present outstanding child health difficulties, the social problems were grave, as both parents are reputed to be alcoholics. In spite of this, they both have given the child a great deal of educational attention and have built a very firm foundation for her to be ready to enter kindergarten.

This child was 3 when she began the program; she is now almost 5 and will be going to kindergarten next year. We first met the family in November of 1974. The social worker has known the family for years because they have several older siblings who have problems, including one girl about 16 years old who has just dropped out of high school and had a baby. They are in financial trouble and have no car or other means of transportation, which is a problem because they live far from the town. The social worker hears from the teenage siblings that both

parents are alcoholics, and that the drinking problem is worsening. The home is quite unclean, yet the family eats reasonably well, and H. appears vibrantly healthy, other than having decaying teeth. The social worker was able to provide transportation to take the child to a free dental clinic. That seemed to be the major health problem as far as H. was concerned. The social worker is also attending to the needs of the family in terms of financial troubles, possible alcoholism, and other transportation needs.

As for educational activities, the developmental specialist did an appraisal of H.'s developmental level in January of 1975, when she was 3½ years old. She seemed quite on schedule and even advanced for her age. Both parents spent a great deal of time doing educational activities with her and she had lots of materials such as books, puzzles, a school desk, pens, pencils, crayons, chalk, and many manipulative materials; in addition, she watched Sesame Street and the other educational television programs for children daily. At that time she knew colors and shapes, numbers to count to 10 with objects, and was learning to recognize some number symbols and some letters. She had very clear and good speech with a voluminous vocabulary, and she was outgoing and friendly as well as cooperative. Her attention span is long, which is certainly helpful for learning. She could benefit from preschool and playmates and also from trips to the library, but the lack of money or transportation make that impossible at this time. Therefore, our main goal was to bring as many toys and books and materials as possible to the home to enrich the learning environment, to give specific assignments to the parents to encourage them to help H. to learn in a systema-

tic way, to model for the parents ways of interacting with her and ways of guiding her interaction to help her learn as much as possible, and to help her to love learning. We also worked with the several other children in the family who spend a lot of time with H., have attended the VEAP meetings for parents and families, and are an excellent resource for helping to teach her.

In the following pages, I would like to briefly share the monthly logs which I jotted down after each visit to give an idea of the general goals and the wealth of materials available for implementing a home-based program.

During the November visit, I met with both parents and H. for 1½ hours. We discussed H.'s present level and shared ideas of ways to "increase mileage," i.e., to help her to learn more. We went over the screening test which is used for the kindergarten, and the parents were able to see that their daughter is ready for school. We reviewed the things she knows and discussed possible objectives for this year. For example, with attribute blocks we did colors, shapes, numbers, counting, sorting, stacking, recycling, and fine motor coordination. The child gave me six pages of pictures which she had drawn, including her name and numbers 1 to 5 which she had practiced for homework. The materials which I took to the home were a book of craft activities, a child development book for the parents to gain ideas of educational activities to do at home, two records for children that discuss health and nutrition, and a booklet on nutrition education. H.'s new homework was to work on the numbers 1 to 10 and to be able to recognize and write them.

During the December visit, they met me at the door with twenty

pages of H.'s written homework! Her long attention span enables her to do a great deal of "homework" at one sitting. For example, in one visit she wrote all the capital letters, did a flannel board game where she placed all capital letters on their specific places on the flannel board, and got alphabet blocks to place on top of the appropriate letters on the flannel board. After that we set the goal of working on all small letters. Some of the materials given over two visits included three books for the parents, six books for H., primarily alphabet books, six children's records, and numerous pamphlets on health and nutrition. One book was the Mother-Child Cookbook, which inspired the mother to have H. cook with her every single day in the kitchen and to learn basic math and reading that way.

In February when I arrived for the monthly home visit, H. got super-excited and exclaimed, "Ma, it's my teacher!" This child loves learning and loves anything that has to do with education. We worked at the kitchen table and she knows most of the lower case letters now, as well as the capitals. Her long attention span and steady work habits again work in her favor. She gave me ten pages of homework and drawings.

If one were to analyze simply the material aspect of this program, one would find that here is a child who is unable to go to nursery school, yet who has delivered to her home every month at least fifty dollars worth of educational materials. In addition to that, she receives private tutoring and her parents receive monthly lessons in teacher training (as they are indeed the major teachers). This child has been able to follow a systematic developmentally sound curriculum

in the home, and to have her own parents trained to help her in the best way possible. I am very pleased with her progress, and sense that she is ready for kindergarten and will do quite well there.

A P P E N D I X T H R E E

SUMMARY STATEMENT ON THE VERY EARLY ANISA PROGRAM

I intended that the above examples of eight out of twenty case histories convey a sense of the purpose, tone, flexibility, and general approach of the Very Early Anisa Program. They represent concrete data of the way in which the specific needs outlined in the summary chart on page 126 were systematically addressed. In all honesty, the program's impact on most of the children and their families far surpassed our expectations. Against the severe odds faced by such disadvantaged "multi-problem" families, we had no notion that a pilot project of such modest dimensions in terms of size, funds, and labor could produce any demonstrable results. The marked improvements in some situations--as when child A.'s unsupervised medication was removed and when child E.'s mother realized that the child's problem was a correctable hearing impairment rather than mental retardation--led us to speculate on the potency of the preventive approach. The starkly unmet needs in other cases led us to question what could be done and by whom to help not only these specific children but to penetrate to the roots of the broader social conditions underlying their families' disorders to prevent such problems from even arising in the first place, as in the case of child H. whose parents are both alcoholics or child F. whose mental condition borders on psychosis.

There is no doubt that far greater--more intensive and extensive--community outreach efforts will have to be launched, coupled with careful basic research into the crucial relationships between family stability, the biological integrity of its members, and children's

subsequent psychological development. Nevertheless, we do feel that these histories demonstrate the potential value of designing systematic, comprehensive programs to work with the parents of preschoolers on a universal basis, perhaps through public school systems. We agree with Burton White's assessment of the need for such services to be available for all parents, not merely for poverty groups: "no more than ten percent of our children do as well as they could during the first three years of their lives. This state of affairs [is] a tragedy" (1975:130). That estimate, incidentally, implies that not more than ten percent of parents do as well as they might.

The immense value of bringing the best of available knowledge alive in direct service to parents for the benefit of all children can hardly be imagined. As the Very Early Anisa Program (VEAP) represents the initial stages of what we hope will eventually evolve into a comprehensive support network to unify parents and schools into a single, coherent system for the purpose of enhancing children's biological and psychological development, this three-year trial period provided us with rich insights concerning the central importance of family health and parent education to children's progress. It gave us a glimpse of the potential fruitfulness of preventive programs to help parents enhance child health, and inspired us to new heights of research and service.

A P P E N D I X F O U R

PARENTS' EVALUATION OF THE VERY EARLY ANISA PROGRAM

Twelve of the fifteen families who participated in the Very Early Anisa Program during the academic year of 1975-76 responded to the following questionnaire.

"Dear Parents,

Your assistance in evaluating and commenting upon this year's program will be helpful in planning for the future. Please take a few minutes to respond to the following questions. Thank you for your help."

1. In general, how did you feel about the VEAP Program?

On a 5-point Likert scale, giving the choices of Inadequate, Unimpressive, Acceptable, Satisfactory, and Very Satisfactory; 10 parents marked Very Satisfactory and 2 parents marked Satisfactory.

2. Are there other areas which you think the VEAP Program might include?

4 More pu lic meetings
3 More child management ideas
2 Parents' coffee hours
8 Children's play groups or field trips
3 A tour of the school or library
1 A picnic for families
1 Other ideas--please explain: "To go to the animal game farm or to have an outing at Sunrise Park."

Two of the parents responded to this question by saying, "No, that they did not think that there were other areas which the VEAP Program might include."

3. In addition to home visits, would you be interested in small group meetings, say once a month?

6 Yes 4 No

If so, what time would be best?

4 Morning 3 Afternoon 0 Evening

The parents' comments were perhaps most revealing of how they felt about the program. Therefore, the following pages will quote what the parents themselves wrote on their evaluations of the program. The reason for quoting the parents in their own words is that it captures the personal sense of how the families felt about the program, in a way that the numerical statistics cannot. For example, in response to two questions of "What did you find most helpful?" and "What did you find least helpful?", four parents responded "Everything was most helpful and nothing was least helpful." Although these comments show us that we are on the right track, the more detailed descriptions of the parents' impressions of the program are more illuminating.

One mother wrote "The VEAP Program has made my son advance so much, by bringing him things that have helped with his being able to recognize and write more letters and numbers, especially the small letters. He really is enthusiastic about doing the new things he has been receiving each month. He likes to do the puzzles, etc. without being forced to. It is an excellent program. It got my son to really start taking more interest in things such as recognizing letters and being able to write them. He really seems so much more enthusiastic about learning. Everything about the program was very satisfactory."

A second mother wrote "I found it most helpful to talk with Beth to see if my son was progressing as well as he should be according to his age bracket. Also, the books to read to my son and the toys and puzzles for him to play with were very helpful."

A third mother, when asked "What did you find most helpful?", replied "Everything." When asked, "What did you find least helpful?",

replied "I don't think anything was least helpful. The whole program was good for my son." When asked, "Do you have any comments about the toys and materials that might help us plan for next year?", she replied, "I thought all the toys and materials were helpful, the whole program was very satisfactory."

A fourth parent wrote, "I got very satisfactory answers to any questions I asked about the Anisa Program or anything related to it. My children enjoyed the puzzles and books immensely, and the adult books for my reading I always found interesting." In response to "We welcome your general comments, questions, and suggestions," this mother responded "Not only did my children enjoy Beth's visits and the different things she brought them, they also liked having her do some of the activities with them while she was there. I personally found her very helpful in the many discussions we had."

A fifth parent wrote, "I really enjoyed the program. I think my daughter and son benefitted from it."

A sixth parent wrote, "I found that the coordination between the VEAP Program and the nursery school was very beneficial to my child's progress." When asked if she had any comments about the toys and materials that might help us plan for next year, this mother wrote, "The toys and materials were very useful to my daughter's learning."

A seventh parent, when asked "What did you find most helpful?", responded, "Everything I read or heard."

Another parent, when asked "What did you find most helpful?", wrote "Finding somebody to tell me how my child compared with others; also finding someone who listened when I thought there was something

wrong but no one else did." By way of explanation, this child had a speech and hearing problem which the mother recognized before anyone else did. She was so relieved when the VEAP Program listened to her concern and sought out professional help for the child. At this time the speech and hearing problem has been largely corrected. On the parent questionnaire, this particular parent wrote that there should be "much more interaction between school and parent."

In summary, as one can see from this sample of several parents who participated in the program, it was generally very well received. There were several very useful comments for next year, for example to consider including more public meetings, children's play groups, field trips, and/or a tour of the school and library. Several parents said they would be interested in coming to small group meetings; the ratio was 6 to 4 on that question. None of the parents had negative comments of any kind about the program.

A P P E N D I X F I V E

RESOURCES USED IN THE VERY EARLY ANISA PROGRAM

Resources for Survey Forms

1. "Screening Children for Nutritional Status: Suggestions for Child Health Programs."
   HEW Pub. No. (HSM) 73-5603. Price--40 cents (Booklet).
   Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

2. "Wunder-forms #1-12."
   Pregnancy, Birth, Developmental, and Medical History Surveys.
   By Ray C. Wunderlich, M.D.
   Available from Johnny Reads, Inc., Educational Publishers, Box 12834, St. Petersburg, Florida 33733.

3. "Inventory of Home Stimulation."
   An observation and interview procedure used to assess the social, emotional, and cognitive support available to the young child in the home.
   In an Instruction Manual, by Bettye M. Caldwell, 1969.

4. "Prior Experience Inventory."
   "Exceptional Trait Record."
   Two surveys to be completed by parents to give their child's daily activities, interests, and strengths.
   In: Playway: Education for Reality, by David and Madeline Davis, and Harlen and Ruth Hansen. Minnesota: Winston Press, 1973.

Resources for Health and Nutrition Education Materials

1. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

   "Prenatal Care." 79pp. 1973.
   HEW Pub. No. (OCD) 73-17. GPO Stock No. 1791-00187.

   "Infant Care." 80pp. 1973.
   HEW Pub. No. (OHD) 75-15. GPO Stock No. 1791-00178.

   "Your Child from 1 to 3." 24pp. 1964.
   HEW Pub. No. (OCD) 73-56. GPO Stock No. 1791-00019.

   "Your Child from 1 to 6." 97pp. 1962.
   HEW Pub. No. (OHD) 74-26. GPO Stock No. 1791-00069.

"Young Children and Accidents in the Home." 28pp. 1974.
HEW Pub. No. (OHD) 74-34. GPO Stock No. 1791-00191.

"The Pocket Guide to Babysitting." 1974.
HEW Pub. No. (OHD) 74-45. GPO Stock No. 1791-00197.

"The Ways Children Learn." 16pp. 1970.
HEW Pub. No. (OHD) 75-1026. GPO Stock No. 1791-00180.

"Nutrition Education for Young Children." 56pp. 1969.
HEW Pub. No. (OHD) 75-1015.

2. Available from the Health and Welfare Division, Metropolitan Life Insurance Company, One Madison Avenue, New York, NY 10010.
(The following brief descriptions were excerpted from the company's annotated bibliography of family health publications.)

"Memo to Parents About Immunizations." 12pp.
Explains the importance of early immunizations and gives a suggested schedule. A comprehensive chart details information on the communicable diseases of childhood. Space for keeping children's immunization records is included.

"Watching Your Child's Health." 8pp.
Offers suggestions on what parents can do for their children's health. Discusses the roles of the teacher, other school health personnel, physician and dentist.

"Panic/or Plan?" 20pp.
Offers information on how to prevent and handle family medical emergencies. Contains health and safety tips, home safety checklist, facts on immunization, and ideas for planning community safety and emergency care programs. Lists additional references.

"Your Child's Safety." 28pp.
Contains information on children's growth and development patterns which can help parents to foresee potential accident situations and take precautions. Emphasizes importance of safe surroundings, play space and safe play materials.

"You and Your Health." 36pp.
Gives suggestions on how to achieve and maintain good health, choose and use medical care services and other health resources. Describes community health and safety services and recommends additional sources of health information.

"Looking for Health." 32pp.
A professional reference for people working with children--teachers, administrators, nurses and other school health personnel. Photographs illustrate clues to illnesses and chronic health problems often seen among school children. Emphasizes the teacher's role as health observer and the importance of communication and cooperation among home, school and community resources. Includes reference list. For pre-service and in-service teacher preparation.

"Home Nursing Handbook." 34pp.
Guide for at-home care of the sick or disabled. Contains instructions for basic health care techniques plus ideas for meeting the needs of children, adults, handicapped and older people. Includes descriptions of health and social services offered by voluntary and official agencies.

"Metropolitan Life's Exercise Guide and Chart." 16pp. plus Chart.
For adult women and men, to emphasize the importance of daily exercise. Answers questions about fitness, weight control and posture. Outlines an exercise program.

"Personal Health Record." 8pp.
A handy folder for keeping a record of your health and medical history, including immunizations, health problems, prescribed medications, lab tests, hospitalizations, blood type and blood donations. A succinct, useful reference for each family member.

"Stress and Your Health." 16pp.
Intended to help individuals understand the relationship between mental stress and tension and how they affect us. Discusses different types of stress and offers practical suggestions for handling everyday tension. Includes other sources of information.

"I Won't! I Won't!." 32pp.
Illustrates children in problem situations, revealing possible signs of underlying emotional difficulties. Suggests ways of meeting their emotional and physical needs and lists reliable sources of help and guidance. For parents, teachers, health professionals and others concerned with children.

"Sitting Safely." 16pp.
A guide for baby sitters, outlining what to expect of babies and children through age seven, with appropriate safety reminders. Tells what specific information to get from parents, including where they can be reached and other necessary phone numbers.

"New Metropolitan Cook Book." 64pp.
A cook book to help the whole family enjoy well-balanced, nutritious meals that are simple to prepare.

3. Available from the National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612.

"Safety and Accident Prevention: Safety Checklist for Parents."
"Home Safety Round-Up."
Both are checklists to help parents spot potential hazards that may exist in the home.

4. Available from the National Dairy Council, 111 North Canal Street, Chicago, Illinois 60606.

   Nutrition Education:
   "Your Guide to Good Eating and How to Use It."
   "Your Children's Health Day by Day."
   "Food Before Six."
   "Feeding Little Folks."
   "Your Daily Food Record."
   "Every Day, Eat the 1-2-3-4 Way!" (Four Food Groups).
   "Your Health: How Can You Help?" (Written for Children).
   "For Good Dental Health, Start Early."

5. Available from the American Dental Association, 211 East Chicago Ave., Chicago, Illinois 60611.

   "Your Child's Teeth."
   A guide that explains facts about teeth, oral diseases, and dental care to parents.

6. In addition to the above materials, the VEAP staff wrote and/or duplicated articles on numerous health and nutrition subjects. Some sample titles are given below.

   "Fire Prevention."
   "Parents' Guide to Health Warning Signals in Children."
   "Hyperactivity and Diet."
   "The Development of Basic Cooking Skills in Children."
   "Safe Toys."

A P P E N D I X S I X

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